UNIVERSITAT DE BARCELONA

Investigating the Signs and Sounds of Cypro-Minoan

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INVESTIGATING THE SIGNS AND SOUNDS OF CYPRO-MINOAN

Miguel Filipe Grandão Valério

Doctoral dissertation supervised and advised
by Prof. Dr. Ignasi-Xavier Adiego Lajara

in

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Aos meus pais e à Eva

ABSTRACT

The aim of this dissertation is to advance our knowledge of Cypro-Minoan, a group of undeciphered syllabic inscriptions dated roughly to the 16th or 15th through the 11th centuries BCE and found mostly on Cyprus, with small numbers of documents from coastal Syria and Tiryns (Peloponnese).

Two recently-published collections of inscriptions (Olivier 2007; Ferrara 2012 and 2013) have facilitated greatly the investigation of Cypro-Minoan, but the field is still missing a comprehensive paleographical study of the script and a definitive sign-list on which most scholars can agree. Albeit being now the main reference, Olivier's sign repertory of 96 syllabograms is structured upon É. Masson's (1974) division of Cypro-Minoan into three "subscripts" (CM 1, 2 and 3), supposedly created and used for different languages, a scheme which has come under criticism. It remains uncertain whether the Cypro-Minoan documents contain one or multiple writing systems. Together with the size of the corpus (almost 4,000 signs on fewer than 250 inscriptions), these lacunae greatly reduce the chances of decipherment. The present work intends to demonstrate that Cypro-Minoan in fact presents some advantages that open prospects for elucidating the script and that a methodology that is well-adjusted to them may contribute to improve our understanding of the inscriptions. Therefore, the goal of this thesis is twofold: (1) to establish a signary that identifies individual Cypro-Minoan signs and defines their paleographical variation to a fine degree of accuracy; and (2) to investigate the possible sounds represented by these signs. The second objective is achieved by means of a three-step methodology. The first two steps comprise, on one hand, cross-comparisons between the Cypro-Minoan signs (in terms of form and value) and signs attested in related scripts, namely Linear A and the Cypriot Greek syllabary; on the other hand and independently, internal analyses (positional distribution and frequency, alternations of related signs as a result of morphological activity, and scribal hesitations). The sound values proposed through these two methods are then tested by a third, which consists of provisionally transliterating a limited set of Cypro-Minoan inscriptions, to ascertain whether they yield readings corresponding to linguistic data known from external sources, therefore validating the hypothetical sign values and possibly even proposing new ones.

While a cogent decipherment is not the scope of this project, two main objectives are achieved. The first is to offer a revised list of Cypro-Minoan signs, not framed within the traditional division, but based on selected homogeneous subcorpora of inscriptions, with no preconceived bias as to the number of script varieties represented. It is argued that Cypro-Minoan contains between 57 and 70 different syllabograms, depending on the validity of a number of proposed assimilations of signs that possibly are mere allographs. Secondly, phonetic values are proposed for 60 of these sign forms: nine are considered confirmed and the rest hypothetical. In the investigation of the phonetic values, interpretations are offered for RASH Atab 004 (=

RS 20.25), a clay tablet from Ugarit (Syria) long thought to contain a nominal list, and a limited set of sequences found on inscriptions from Cyprus. The suggested sound values and interpretations of sign-sequences, many of which represent identifications of personal names recognizable from cuneiform sources, independently corroborate a significant number of proposals made by Nahm in the 1980s.

EXTRACTO

La tesis desarrolla un estudio de la escritura chiprominoica, representada por un grupo de epígrafes silábicos fechados aproximadamente entre los siglos XVI o XV y XI a.n.e., hallados en Chipre, y, en menor grado, en la costa siria y en Tirinto.

El chiprominoico se caracteriza por un *corpus* limitado, con una serie de problemas de investigación que dificultan el desciframiento. Pese a la reciente publicación de dos recopilaciones de inscripciones, incluyendo un inventario de 96 signos (Olivier, 2007) estructurado a partir de la división del chiprominoico en tres escrituras supuestamente distintas (CM 1, 2 y 3) propuesta por É. Masson (1974), no existe consenso en cuanto al número de signos y escrituras que integran el corpus.

Buscando una metodología adaptada a los problemas que la escritura plantea, el objetivo ha sido doble: (1) establecer un signario fundamentado en análisis paleográficos y con criterio y (2) investigar los posibles valores fonéticos de estos mismos signos. El segundo objetivo se ha realizado en tres pasos metodológicos. Los dos primeros son independientes: la comparación entre los signos del chiprominoico (en cuanto a forma y valor) y los de escrituras "emparentadas" (el Lineal A y el silabario chiprogriego); y en una serie de análisis internos (distribución, interacción entre signos de valor relacionado y correcciones de escribas). El tercer método ha consistido en probar los valores fonéticos sugeridos por los dos primeros a través de la transliteración provisional de un conjunto restringido de epígrafes.

Así, se presenta, por un lado, un listado revisado de silabogramas chiprominoicos basado no en la división tradicional, pero partiendo de subgrupos homogéneos de epígrafes, sin prejuicio en cuanto al número de escrituras en ellos representados. Este listado se compone de entre 57 a 70 signos, algunos seguramente meros alógrafos. Por otro lado, se proponen valores fonéticos para 60 de estos caracteres, de los cuales nueve se consideran confirmados y los demás hipotéticos. Simultáneamente, se ofrecen interpretaciones de la tablilla RASH Atab 004 (= RS 20.25), procedente de Ugarit, y algunas secuencias en epígrafes de Chipre. Los resultados, que incluyen mayormente identificaciones de antropónimos conocidos de las fuentes cuneiformes y no suponen un desciframiento definitivo, corroboran varias propuestas ya esbozadas por Nahm (1981; 1984).

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ACKNOWLEDGEMENTS

I must begin by wholeheartedly thanking Ignasi-Xavier Adiego Lajara for accepting to supervise this thesis, thus allowing the enterprise to unfold. In addition to that, his experience with a writing system that for a long time challenged decipherment, Carian, was a constant source of inspiration along the road and will remain so beyond the conclusion of this work. My deepest gratitude goes to the Fundação para a Ciência e Tecnologia of the Portuguese Ministry of Education, whose generous Doctoral Research Grant (SFRH/BD/77529/2011) allowed me to come to the University of Barcelona and develop my research. The untiring assistance in more practical matters of Ernest Marcos Hierro, coordinator of the program in "Languages and Cultures of the Ancient World and Their Lasting Presence" was valuable and much facilitated my path.

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To my friends Joana Bruno, who produced one of the illustrations and made many crucial suggestions for the rest, and Edgar Fernandes, for his reading of several early versions of some chapters. To María Inés Fregeiro, for revising the Spanish abstract that accompanies this work. No remaining error or shortcoming should be considered their responsibility. Many others deserve my gratitude and a sincere apology for my long absence. To my parents: for always making the road easier to travel. Lastly, Eva, whose patience and continuous support were what in the end allowed me to accomplish the pages offered here.

CONCORDANCE OF CYPRO-MINOAN INSCRIPTIONS

BY SEQUENTIAL ABSOLUTE NUMBER

HoChyMin:

##001. ENKO Atab 001
##002. ENKO Abou 001
##003. ENKO Abou 002
##004. ENKO Abou 003
##005. ENKO Abou 004
##006. ENKO Abou 005
##007. ENKO Abou 006
##008. ENKO Abou 007
##009. ENKO Abou 008
##010. ENKO Abou 009
##011. ENKO Abou 010
##012. ENKO Abou 011
##013. ENKO Abou 012
##014. ENKO Abou 013
##015. ENKO Abou 014
##016. ENKO Abou 015
##017. ENKO Abou 015bis
##018. ENKO Abou 016
##019. ENKO Abou 016bis*
##020. ENKO Abou 017
##021. ENKO Abou 018
##022. ENKO Abou 019
##023. ENKO Abou 020
##024. ENKO Abou 021
##025. ENKO Abou 022
##026. ENKO Abou 023
##027. ENKO Abou 024
##028. ENKO Abou 025
##029. ENKO Abou 026
##030. ENKO Abou 027
##031. ENKO Abou 028
##032. ENKO Abou 029
##033. ENKO Abou 030
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##035. ENKO Abou 032
##036. ENKO Abou 033
##037. ENKO Abou 034
##038. ENKO Abou 035
##039. ENKO Abou 036
##040. ENKO Abou 037
##041. ENKO Abou 038
##042. ENKO Abou 039
##043. ENKO Abou 040
##044. ENKO Abou 041
##045. ENKO Abou 042
##046. ENKO Abou 043
##047. ENKO Abou 044
##048. ENKO Abou 045
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##052. ENKO Abou 049
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##056. ENKO Abou 053
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##072. ENKO Abou 069
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##078. ENKO Abou 074
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##082. ENKO Abou 078
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##084. ENKO Abou 080
##085. ENKO Abou 081
##086. ENKO Abou 082

##087. ENKO Abou 083
##088. HALA Abou 001
##089. HALA Abou 002
##090. KITI Abou 001
##091. KITI Abou 002
##092. ATHI Adis 001
##093. ENKO Aost 001
##094. ENKO Aost 002
##095. ENKO Apes 001
##096. ENKO Apla 001
##097. ENKO Arou 001
##098. KALA Arou 001
##099. KALA Arou 002
##100. KALA Arou 003
##101. KALA Arou 004
##102. KALA Arou 005
##103. PSIL Asta 001
##104. ALAS Avas 001
##105. ARPE Avas 001
##106. ATHI Avas 001
##107. ATHI Avas 002
##108. ENKO Avas 001
##109. ENKO Avas 002
##110. ENKO Avas 003
##111. ENKO Avas 004
##112. ENKO Avas 005
##113. ENKO Avas 006
##114. ENKO Avas 007
##115. ENKO Avas 008
##116. ENKO Avas 009
##117. ENKO Avas 010
##118. ENKO Avas 011
##119. ENKO Avas 012
##120. ENKO Avas 013
##121. ENKO Avas 014
##122. HALA Avas 001
##123. IDAL Avas 001
##124. IDAL Avas 002
##125. KALA Avas 001
##126. KALA Avas 002
##127. KATY Avas 001
##128. KATY Avas 002
##129. KATY Avas 003
##130. KITI Avas 001
##131. KITI Avas 002
##132. KITI Avas 003
##133. KITI Avas 004
##134. KITI Avas 005
##135. KITI Avas 006
##136. KITI Avas 007
##137. KITI Avas 008
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##139. KITI Avas 010
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##141. KITI Avas 012
##142. KITI Avas 013
##143. KITI Avas 014
##144. KITI Avas 015
##145. KITI Avas 016
##146. KITI Avas 017
##147. KITI Avas 018
##148. KITI Avas 019
##149. KOUR Avas 001
##150. KOUR Avas 002
##151. KOUR Avas 003
##152. KOUR Avas 004
##153. MAAP Avas 001
##154. MAAP Avas 002
##155. MAAP Avas 003
##156. MAAP Avas 004
##157. MARO Avas 001
##158. MYRT Avas 001
##159. MYRT Avas 002
##160. TOUM Avas 001
##161. KITI Iins 001
##162. KITI Iins 002
##163. KITI Ipla 001
##164. ENKO Mbij 001
##165. KALA Mbij 001
##166. KALA Mbij 002
##167. KITI Mexv 001
##168. ENKO Mins 001
##169. ENKO? Mins 002
##170. PPAP Mins 001
##171. PPAP Mins 002
##172. PPAP Mins 003
##173. PYLA Mins 001
##174. ENKO Mlin 001
##175. ENKO Mlin 002
##176. ENKO Mlin 003
##177. PYLA Mlin 001
##178. CYPR Mvas 001
##179. CYPR Mvas 002
##180. CYPR Mvas 003
##181. CYPR Mvas 004
##182. ENKO Mvas 001
##183. ENKO Mvas 002
##184. MYRT Mvas 001
##185. MYRT Mvas 002
##186. PPAP Mvas 001

##187. ENKO Pblo 001
##188. KITI Pblo 001
##189. PPAP Pblo 001
##190. PPAP Pblo 002
##191. KALA Ppla 001
##192. KALA Ppla 002
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##217. SYRI Psce 001

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ADD##233. IDAL Avas 003
ADD##234. IDAL Pfus 001
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ADD##239. MARO Avas 002
ADD##240. MARO Avas 003
ADD##241. MARO Avas 004
ADD##242. SANI Avas 001
ADD##243. RASH Avas 001
ADD##244. TIRY Abou 001

Further addenda:

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ADD##246. TIRY Avas 002

ADD##247. ENKO Abou 084
ADD##248. KOUR Avas 005
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ADD##251. RASH Avas 002
ADD##252. CYPR? Psce 008
ADD##253. PPAP Psce 001

BY SEQUENTIAL ABSOLUTE NUMBER

HoChyMin, CMI and further addenda:

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ATHI Avas 001. ##106
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CYPR Mvas 003. ##180
CYPR Mvas 004. ##181
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CYPR? Psce 004. ##196
CYPR? Psce 005. ##197
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ENKO Abou 082. ##086
ENKO Abou 083. ##087
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ENKO Aost 002. ##094
ENKO Apes 001. ##095
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ENKO Apes 003. ADD##223*
ENKO Apla 001. ##096
ENKO Arou 001. ##097
ENKO Atab 001. ##001
ENKO Atab 002a-b. ##207
ENKO Atab 003. ##208
ENKO Atab 004. ##209
ENKO Avas 001. ##108
ENKO Avas 002. ##109
ENKO Avas 003. ##110
ENKO Avas 004. ##111
ENKO Avas 005. ##112
ENKO Avas 006. ##113
ENKO Avas 007. ##114
ENKO Avas 008. ##115
ENKO Avas 009. ##116
ENKO Avas 010. ##117
ENKO Avas 011. ##118
ENKO Avas 012. ##119
ENKO Avas 013. ##120
ENKO Avas 014. ##121
ENKO Mbij 001. ##164
ENKO Mins 001. ##168
ENKO? Mins 002. ##169
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ENKO Mins 004. ADD##229
ENKO Mins 005. ADD##230
ENKO Mlin 001. ##174
ENKO Mlin 002. ##175
ENKO Mlin 003. ##176
ENKO Mvas 001. ##182
ENKO Mvas 002. ##183
ENKO Pblo 001. ##187
ENKO Pblo 002. ADD##224
ENKO Psce 001. ##199
ENKO? Psce 002. ##200
ENKO Psce 003. ADD##225
ENKO Psce 004. ADD##226
ENKO Psce 005. ADD##227
HALA Abou 001. ##088
HALA Abou 002. ##089
HALA Avas 001. ##122
HALA Psce 001. ##201
IDAL Avas 001. ##123
IDAL Avas 002. ##124
IDAL Avas 003. ADD##233
IDAL Pfus 001. ADD##234
IDAL Psce 001. ADD##232*
KALA Arou 001. ##098
KALA Arou 002. ##099
KALA Arou 003. ##100
KALA Arou 004. ##101
KALA Arou 005. ##102
KALA Avas 001. ##125
KALA Avas 002. ##126
KALA Mbij 001. ##165
KALA Mbij 002. ##166
KALA Ppla 001. ##191
KALA Ppla 002. ##192
KALO Avas 001. ADD##235
KATY Avas 001. ##127
KATY Avas 002. ##128
KATY Avas 003. ##129
KITI Abou 001. ##090
KITI Abou 002. ##091
KITI Avas 001. ##130
KITI Avas 002. ##131
KITI Avas 003. ##132
KITI Avas 004. ##133
KITI Avas 005. ##134
KITI Avas 006. ##135
KITI Avas 007. ##136
KITI Avas 008. ##137
KITI Avas 009. ##138
KITI Avas 010. ##139
KITI Avas 011. ##140
KITI Avas 012. ##141
KITI Avas 013. ##142
KITI Avas 014. ##143
KITI Avas 015. ##144
KITI Avas 016. ##145
KITI Avas 017. ##146

KITI Avas 018. ##147
KITI Avas 019. ##148
KITI Avas 020. ADD##236
KITI Avas 021. ADD##237
KITI Iins 001. ##161
KITI Iins 002. ##162
KITI Ipla 001. ##163
KITI Mexv 001. ##167
KITI Pblo 001. ##188
KLAV Avas 001. ADD##23
KOUR Avas 001. ##149
KOUR Avas 002. ##150
KOUR Avas 003. ##151
KOUR Avas 004. ##152
KOUR Avas 005. ADD##248
KOUR Avas 006. ADD##249
KOUR Avas 007. ADD##250
KOUR Psce 001. ##202
MAAP Avas 001. ##153
MAAP Avas 002. ##154
MAAP Avas 003. ##155
MAAP Avas 004. ##156
MAAP Avas 005. ADD##238
MARO Avas 001. ##157
MARO Avas 002. ADD##239
MARO Avas 003. ADD##240
MARO Avas 004. ADD##241
MYRT Avas 001. ##158
MYRT Avas 002. ##159
MYRT Mvas 001. ##184
MYRT Mvas 002. ##185
PARA Psce 001. ##203
PARA Psce 002. ADD##218
PPAP Mins 001. ##170
PPAP Mins 002. ##171
PPAP Mins 003. ##172
PPAP Mvas 001. ##186
PPAP Pblo 001. ##189
PPAP Pblo 002. ##190
PPAP Psce 001. ADD##253
PPAP Vsce 001. ##206
PSIL Asta 001. ##103.
PYLA Mins 001. ##173
PYLA Mlin 001. ##177
PYLA Psce 001. ##204
RASH Aéti 001. ##210
RASH Aéti 002. ##211
RASH Atab 001. ##212
RASH Atab 002. ##213
RASH Atab 003. ##214
RASH Atab 004. ##215
RASH Avas 001. ADD##243.
RASH Avas 002. ADD##251
RASH Mvas 001. ##216
SALA Psce 001. ##205
SANI Avas 001. ADD##242
SYRI Psce 001. ##217
TIRY Abou 001. ADD##244
TIRY Avas 001. ADD##245
TIRY Avas 002. ADD##246
TOUM Avas 001. ##160

INTRODUCTION

> *An unknown language written in an unknown script cannot be deciphered, bilingual or no bilingual. It is our task to find out what the language was, or what the phonetic values of the signs were, and so remove one of the unknowns.*
>
> A. E. Kober[1]

AIMS AND OVERVIEW

The purpose of this dissertation is to advance our present knowledge of Cypro-Minoan, a group of undeciphered syllabic inscriptions found mostly in Cyprus (with small numbers of documents from coastal Syria and Tiryns, in the Peloponnese) and dated roughly to the 16th through the 11th centuries BCE. Among the regional powers of the East Mediterranean that dominated the political scene during the Late Bronze Age, Cyprus is one of the few whose internal written documents we are still unable to read. This lacuna is historically frustrating and the decipherment of Cypro-Minoan writing system would surely shed great light on the island's past.

Starting with the discovery of the script at the dawn of the 20th century, scholarship was for decades dominated by individual publications of limited scope, punctuated by a small number of attempts at systematizing the data. After a period of relative dormancy in the 1900s and early 2000s, in recent years scientific interest in Cypro-Minoan resurged. The epitomes of this renewed concern are two independent collections of inscriptions. First, Jean-Pierre Olivier (2007) committed his vast experience in editing epigraphic material of the Bronze Age Aegean to publishing *Édition holistique des textes chypro-minoens* (wittily abbreviated to *HoChyMin*), the first de facto corpus. In parallel, Silvia Ferrara (2012, 2013) published her doctoral dissertation in the form of a two-volume archaeological corpus of inscribed objects named *Cypro-Minoan Inscriptions* (henceforth *CMI*).

Thanks to the generous efforts of Olivier and Ferrara, scholars with an interest in Cypro-Minoan no longer have to rely on numerous scattered publications. However, neither compilation offers charts with the perceivable range of paleographical variation for each sign, or a definitive sign-list on which most scholars can agree. These were defining features of the much-respected Linear A *corpus*, *GORILA* (which Olivier co-authored with Louis Godart), but remain unachieved goals for Cypro-Minoan. In decipherment-aimed work, recognizing which sign is which must come before all other analytical stages. The lack of a reference signary has not prevented the undertaking of numerous studies focused on reading Cypro-Minoan, but with little surprise up to this day there is little agreement on the values of the script's signs. A further problem of

[1] Kober (1948: 102).

research, intimately tied to the lack of consensus on the signary, is Émilia Masson's theoretical division of Cypro-Minoan into four scripts, supposedly devised for multiple languages, a scheme that became widely accepted and has molded Olivier's editions and sign-list. There are problems to the methodological foundations of this model and the number of criticisms has gradually been increasing.

This thesis seeks to address these problems and therefore it has two primary goals: (1) to establish a scrupulous signary that distinguishes *individual* signs and maps their paleographical variation to the possible extent; (2) to investigate the sounds represented by those signs. While a complete decipherment is not on the horizon and seems unlikely in the face of the material available at present, I hope the pages that follow at least materialize important steps in that direction.

Chapter 1 details the history of research on Cypro-Minoan, with a special concern for methodology and problems of decipherment, and characterizes the *corpus* of inscriptions that constitutes the object of the dissertation. Chapter 2 is dedicated to the task of establishing the signary. Chapters 3 through 5 look into the sound values of the signs established in Chapter 2 by means of a three-step analysis: Chapter 3 compares the signs of Cypro-Minoan with the syllabograms of Linear A and Cypro-Greek and suggests hypothetical phonetic values for the majority of them; Chapter 4 contains an internal study of the signs that is independent of, but at the same time articulated with, the results of the preceding chapter; Chapter 5 employs the hypothetical sound values suggested by Chapters 3 and 4 to transliterate tentatively a number of inscriptions that possibly contain linguistic material recognizable from external sources, and looks for interpretable sequences capable of validating the hypothetical sound values. Conclusions discusses briefly the results of Chapters 2 through 5.

Appendix A contains critical transliterations of the inscriptions currently published and collected (see section 1.2.1) that serve as basis for the analyses in Chapters 2-5. In a number of cases corrections to the readings of *HoChyMin* and *CMI* are suggested. Appendix B contains indices of the sign-sequences extracted from Appendix A. Appendix C offers tables with the chronology of the Cypro-Minoan inscriptions analyzed in the thesis. Appendix D summarizes the phonetic values proposed for Cypro-Minoan signs in past works. Appendix E contains an index of sign-sequences transliterated and interpreted in Chapter 5. Lastly, Appendix F contains the International Phonetic Alphabet (IPA) used in phonological interpretations throughout the thesis.

METHODOLOGY

> *Let us begin by asking two questions. What elements are necessary to make decipherment of an unknown script possible? How then should a decipherer present his or her results in order to convince a general skeptical scholarly audience?*
>
> T. G. Palaima[2]

Although each analytical chapter details its methodological foundations, it is important to give in advance an overview of the dissertation's procedural framework.

The methodology I use takes into consideration the nature of the corpus to be analyzed. It has been underlined that a decipherment of Cypro-Minoan is impossible *tout court*[3] because of the limited amount of inscriptions (nearly 250) and the total number of syllabograms (less than 4,000). On the other hand, the script is essentially phonographic and lacks a set of logograms for commodities comparable to that of Linear A and B that might provide us with semantic clues on the contents of the texts. The latter is indeed a disadvantage, but regarding the former it must be noted that although attempts have been made to estimate the minimum amount of material needed for decipherment, it is hardly possible to come up with a universal figure for any given script.[4] The reason is simple: it is a matter of quality, not quantity. As Chadwick put it, "[h]ow much is needed depends upon the nature of the problem to be solved, the character of the material, and so forth."[5] A very small corpus may be deciphered if a bilingual exists and the underlying language belongs to a known linguistic family, but a much larger body of texts may resist decoding if it yields little information on its content.

Cypro-Minoan inscriptions do present a number of advantageous features, which will be detailed throughout the chapters of the dissertation but are summarized here:

– They include four inscribed tablets (or fragments) from Enkomi, ENKO Atab 002a/b, 003 and 004, which employ a very standardized script. The fact that they yield between 1,300 and 1,500 legible syllabograms means that this subcorpus, conventionally dubbed "CM 2", certainly deploys most, if not all, of the signs of the

[2] Palaima (1989a: 132).
[3] Steele (2013: 13).
[4] For example, the "unicity distance" of Shannon (1949) gives an estimation of the minimum length that a text written in an undeciphered script should have to be in order to be successfully deciphered. Yet even this calculation depends on "redundancy," defined as a parameter of any language which measures the maximum amount of reduction that a text can undergo without any loss of information. Hence, even under this approach the amount of text needed would vary from language to language. Duhoux (2009a: 34-35, n. 127; 2013: 29, n. 14) has used a version of Shannon's formula in studies of Cypro-Minoan material.
[5] Chadwick (1970: 26).

script it uses. This gives us some insight into what the signary (or one of the signaries) of Cypro-Minoan looked like.

– They have obvious affinities with two deciphered syllabaries (Linear B and Cypro-Greek) and another that is readable to some extent, albeit remaining undeciphered (Linear A). This allows for comparisons between their signs, with the aim of suggesting hypothetical phonetic values.

– They show meager yet encouraging traces of inflection, which may suggest phonetic relations between some syllabograms on an abstract level (i.e. independently from any comparisons with other scripts). One such trace has been compared with a well-established linguistic feature of Eteocypriot, a non-Greek language of Cyprus attested in syllabic inscriptions dating to the 1st millennium BCE (see Chapter 4).

– They contain a small number of sign-sequences repeated in objects that are typologically and functionally diverse, therefore providing semantic clues on their content.

– They also include a complete clay tablet found at Ugarit (Syria), RASH Atab 004, whose text is relatively long and has a transparent list structure. Because of its Syrian background and the likelihood that it contains a list of persons, it is likely that this document contains onomastics or other elements from the local languages (particularly Ugaritic, Akkadian or Hurrian), that we might recognize from external (cuneiform) sources.

If the process of decipherment were to be compared to the construction of a house, then telling apart *individual characters* from mere *graphic variants* is the stage that would equate with building the foundations. The history of decipherments shows that the majority were not achieved until this step was taken to at least some extent,[6] so this step must be taken first. The reappraisal of the signary is undertaken in Chapter 2. Given the little epigraphic cohesion of Cypro-Minoan as a whole, and the problems entailed by the traditional division, as maintained in *HoChyMin*, the task starts with the study of CM 2 and other internally coherent *subcorpora*, such as the cylinder from Enkomi, the tablets from Ugarit and the clay balls. It is argued that a number of characters are mere variants of other characters and therefore must be assimilated. The outcome is a new perspective of the Cypro-Minoan signary, which I propose to frame no longer in the CM 1-2-3 division.

[6] See e.g. Pope (1999).

The investigation of Cypro-Minoan sign values is what occupies more pages of this dissertation. The nature of the corpus, particularly the advantages enumerated above, led to the choice of a three-stage set of procedures. Each stage corresponds to a chapter:

(1) Comparative (inter-script) analysis: the signs of Cypro-Minoan are compared with the syllabograms of its closest relatives, Linear A and Cypro-Greek, resulting in the assignment of hypothetical phonetic values. This task is undertaken in Chapter 3.

(2) Internal and statistical analyses: the frequency, positional distribution and interactions of the syllabograms are surveyed in order to make further inferences about their phonetic values. Results are compared with those of stage (1) throughout. If similar outcomes are reached by the two independent methods, then they are considered more solid. This is the object of Chapter 4.

(3) Testing the hypothetical sign values: the sound values suggested by the two previous procedures are used to transliterate provisionally documents with promising features, focusing particularly on the tablet RASH Atab 004 from Ugarit. The readings obtained are then tested: it is assessed whether they yield Semitic or Hurrian elements attested in external sources (namely in the Mesopotamian logo-syllabary and the Ugaritic consonantal alphabet) without the shortcomings that prevented previous decipherment attempts from being accepted. Other inscriptions whose contents can be surmised from external clues (independently from the hypothetical phonetic values) are also transliterated and analyzed. This occupies Chapter 5.

The possibilities presented by the Cypro-Minoan corpus have been discussed on multiple occasions and I wish to make clear that the methodology I have just described is not wholly new. Nahm (1981) was the first attempt to decipher the values of Cypro-Minoan signs by combining comparative and internal analyses, and then confirming the readings by identifying Semitic and Hurrian names in tablet RASH Atab 004 from Ugarit. A similar multidimensional approach, combining "homography-based readability", "statistical analysis" and "onomastic material in CM documents" has recently been advocated by Facchetti et al. (2013). What remains a *desideratum* in the field is a painstaking study of the Cypro-Minoan signary and its paleography as the groundwork for investigating the sign values. Moreover, in this thesis I hope to explore the possibilities presented by the corpus and the methods outlined here in the most comprehensive way possible.

While decipherment is neither the aim nor the outcome of this survey, throughout I will attempt to present my results in ways demanded of any decipherment-aimed work by the scholarly community. For this purpose, I formulated a number of

principles which are based primarily on a list of six points that, according to Palaima, the decipherer of Cypro-Minoan ought to demonstrate,[7] as well a set of eleven methodological rules outlined by Duhoux for a successful decipherment of five corpora of "pre-Hellenic" Aegean inscriptions, including Linear A.[8] The requisites laid down by these scholars are neither spontaneous nor whimsical. They reflect two centuries of experiences in decipherment which the reader may find in Pope's *The Story of Decipherment* (1999) or, with special focus on Aegean and Cypriot topics, in *Problems of Decipherment*, edited by Duhoux, Palaima and Bennett (1989). Below, I enumerate the principles drawn from the works of these researchers and give details on the strategies I use to fulfill them:

(1) Use a correctly-edited and judicious corpus of inscriptions.

First-hand autopsies of the documents were outside the scope of this dissertation. In the main I follow the editions of *HoChyMin* and, in the case of inscriptions not included in it, I use *CMI* and the relevant individual publications. In a number of cases the readings given in these works can demonstrably be improved. Because this might pass as an attempt to manipulate the data in favor of my views, Appendix A was conceived to substantiate these corrections with illustrations that allow the reader to decide on her/his own, while stating clearly what the original reading was. Finally, I avoid basing relevant arguments on uncertain readings.

(2) Determine the nature of the script's signs.

It is already accepted that Cypro-Minoan signs are essentially phonographic, particularly syllabograms.[9] The evidence as to why this is so is detailed in section 2.2.3.1.

(3) Establish the core signs used by the script.

As mentioned above, this is the object of Chapter 2. Of utmost importance for the paleographical examinations undertaken there is the faithfulness of the representations of the signs. Whenever the comparison between photographs and drawings suggested that the existing illustrations of the characters were not entirely accurate, I produced my own drawings which—however interpretative and deprived of first-hand confirmation—seek to represent realistically the sign as recorded by photography.

[7] Palaima (1989a: 132-133).
[8] Duhoux (1998: 34-35).
[9] See e.g. Olivier (2013: 12) and Steele (2013: 13).

(4) Give compelling methodological justifications for the assigned phonetic values.

As already stated, the sound values proposed are the result of a set of independent methods (Chapters 3-5), rather than circumstantial evidence. Moreover, throughout the analytical chapters a system of question marks is used. If a phonetic value is suggested by one of the methodological steps, but not positively supported by the remaining two, then it bears two question marks (e.g. *ma*[??]); values implied by two steps take only one question mark (*ma*[?]); finally, values supported by the three steps (thus yielding interpretable readings of Cypro-Minoan sequences) are considered validated and no mark is added (*ma*).

One very relevant note ought to be made on the comparative analysis: just as the signary of Cypro-Minoan is to be established by looking at the signs as *they appear on the inscriptions*, so too must the characters of other scripts be used in their *real form* in comparisons. Palaima warns of how perilous it is to compare "Cypro-Minoan signs written by a specific hand" to "standardized Minoan characters".[10] Accordingly, I use the drawings of Linear A signs provided in the editions of the much-respected *GORILA*. The situation with Cypro-Greek is unfortunately more strenuous. Beyond the sign tables published by Mitford and O. Masson,[11] which show very schematized graphic variants of the individual syllabograms, there are presently no detailed paleographical studies of the script.[12] As a result, I was limited to the consultation of drawings and photographs of the earliest Cypro-Greek inscriptions made available in *ICS* and individual publications, which I used to produce my own drawings of the relevant examples of signs.

Regarding phonology: as mentioned above, unlike Cypro-Greek, Linear A remains undeciphered, but is readable to some extent; in Chapter 3, I discuss the extent to which we are capable of reading the Minoan script and the methodological grounds on which we do it.

Presently, linguists have at their disposal a myriad of linguistic generalizations, which are either true of most of the world's contemporary languages ("restricted" or "statistical universals") or have no exceptions ("unrestricted" or "absolute universals"). Historical linguists take into account these generalizations and apply a principle of "uniformitarianism" to their discipline: because the earliest written records reveal languages with features analogous to their modern counterparts, it is assumed that the rules governing present-day language structures were the same in the past and will be the same in the future. Therefore, linguistic universals are ordinarily used to determine what features were possible in ancient languages,[13] while reconstructing traits that are

[10] Palaima (1989a: 138).
[11] Mitford and Masson (1982: 76, 79, figs. 11-12) and *ICS*[2]: 58-59, 62-63, 66-67, figs. 1-6.
[12] This is probably the consequence of the early decipherment of the syllabary and the fact that it is used chiefly for Greek, meaning that the individual signs are distinguished with relative ease.
[13] Croft (2003: 49-50). Theoretically speaking, undocumented features are not impossible: As Croft (*ibid*.) puts it "…there may have existed languages that represented an unattested language type, or there

not supported by generalizations is taken to be perilous in terms of methodology. Since the early 1960s, the results of universalist studies have been used fruitfully to investigate languages preserved only in written form.[14] Here too I draw upon the universals of language and writing systems.

Apart from the individual publications on language universals cited throughout this dissertation, there are two major databases that deserve mention. The first is the *UCLA Phonological Segment Inventory Database* (*UPSID*), a database created by Ian Maddieson in 1984 (with several later updates) with a statistical survey of the phoneme inventories of 451 languages of the world; it is available in digital format at: http://web.phonetik.uni-frankfurt.de/upsid.html. The second, *PHOIBLE* Online, is a repository of cross-linguistic phonological inventories compiled into a single searchable database. As of 2014, it included 2155 inventories relating to 1672 distinct languages. It is available online at http://phoible.org/. Both databases contain information from different sources and, thus, of quite different quality. This is especially true of *PHOIBLE*, which often offers diverging phonological descriptions of the same language. Yet, even if caution is recommendable when using these sources, they should be sufficient for outlining certain typological tendencies of human languages.

(5) Establish a set of well-defined orthographic rules.

A syllabary whose signs only represent open syllables (V, CV, or other subtypes) cannot represent faithfully closed syllables (VC, CVC and so on) or consonant clusters (CC, CCC, etc.). If the language(s) notated by Cypro-Minoan possessed one or both features, or if the script rendered material from foreign languages with such characteristics, then spelling strategies had to be developed to cope with them. These strategies need to be determined, while taking into account that all known writing systems have orthographic rules that are regular to some extent (or otherwise they would not be learnable or functional). Cypro-Minoan was certainly not an exception. Therefore, a constant principle of economy must be followed.

(6) Identify as many structural clues as possible to the nature of the language(s) represented by the script.

Occasionally, it is possible to infer certain morphological and lexical aspects of the language behind a script, even before actual decipherment. As was already mentioned, some Cypro-Minoan material shows some traces of grammatical activity. This is will be taken in consideration, and indeed assist, the process of working out the sound values of the signs.

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may come to exist languages that do so." The author adds: "…an unattested language type is not necessarily an impossible language type. This fact cannot be denied, of course; it can only be mitigated."

[14] Justeson (1976: 58).

(7) The language(s) attained by the decipherment ought to be historically and contextually plausible.

In Chapter 4, a connection between a much Cypro-Minoan ending and a morphological feature of Eteocypriot is proposed which, if confirmed, would imply a linguistic continuum in Cyprus from the late second to the first millennium BCE. This would be hardly suspicious. It is also argued, in Chapter 5, that the tablet RASH Atab 004 contains Semitic and Hurrian onomastic material (as defended by other scholars in the 1970s and 1980s), an interpretation well-suited to the geographical and archaeological context of the inscription.

(8) Interpret the documents in ways that are compatible with their archaeological and historical contexts.

This principle is especially considered in Chapter 5, where a number of typologically-varied inscriptions are transcribed with the hypothetical sound values as a test. Explanations of inscriptions irreconcilable with the functional interpretations given to the objects on which they appear are avoided. In reality, the readings suggested support many of the existing interpretations.

CONVENTIONS

Denominations of writing systems

In this thesis, I make use of the names given conventionally to the syllabic scripts of the Aegean and Cyprus with a single exception. The script used in the first millennium BCE primarily for the ancient Cypriot dialect of Greek has traditionally been labeled "Cypriot Syllabary". This denomination is ambiguous because there was not just one syllabary on Cyprus, while the alternative "Classical Cypriot Syllabary" implies chronological limits that the system in question did not possess. For this reason, here I adhere to "Cypro-Greek," a much less problematic term coined recently by Egetmeyer.[15]

Epigraphical apparatus

The cataloguing system of *HoChyMin*, which *CMI* also employs, assigns to each inscription an "absolute sequential number" (e.g. ##097) and a "name" or label (e.g. ENKO Arou 001). Labels comprise three elements: an abbreviation of the place of provenance with four capital letters (ENKO); an abbreviated typological description that

[15] Egetmeyer (2010: 1). For a discussion of the advantages of using this label, see Valério (2014a).

combines material and morpho-functional referents of the inscribed object (e.g. Arou stands for “clay cylinder” in French: A for “argile” and rou for “rouleau”); and a sequential number (e.g. ENKO Arou 001 is the first clay cylinder from Enkomi that was catalogued). The abbreviations of places of provenance and typological descriptions are the following:

Place-names

ALAS	Alassa-*Palaeotaverna* (Limassol)
ARPE	Arpera (Larnaca)
ATHI	Athienou (Larnaca)
CYPR	Cyprus
DHEN	Dhenia, or Deneia (Nicosia)
ENKO	Enkomi (Famagusta)
HALA	Hala Sultan Tekke (Larnaca)
IDAL	Idalion (Nicosia)
KALA	Kalavasos-*Ayios Dhimitrios* (Larnaca)
KATY	Katydhata (Nicosia)
KLAV	Klavdia (Larnaca)
KITI	Kition (Larnaca)
KOUR	Kourion (Limassol)
MAAP	Maa-*Palaeokastro* (Paphos)
MARO	Maroni (Larnaca)
MYRT	Myrtou-*Pigadhes* (Kyrenia)
PARA	Ayia Paraskevi (Nicosia)
PPAP	Palaeopaphos-*Skales* (Paphos)
PSIL	Psilatos (Famagusta)
PYLA	Pyla-*Verghi* (Famagusta)
RASH	Ras Shamra / Ugarit (Syria)
SALA	Salamis (Famagusta)
SANI	Sanidha (Limassol)
SYRI	Syria
TIRY	Tiryns (Greece)
TOUM	Toumba tou Skourou (Nicosia)

Typological descriptions

Abou	Clay ball (or *boule*)[16]
Adis	Clay disk
Aéti	Clay label
Aost	Clay ostracon
Apes	Clay weight
Apla	Clay plaque
Arou	Clay cylinder
Asta	Clay figurine
Atab	Clay tablet
Avas	Pottery (complete or fragmentary)
Inst	Ivory tool
Ipla	Ivory plaque
Mbij	Metal jewelry
Mexv	Metal ex-voto
Mins	Metal tool
Mlin	Metal ingot
Mvas	Metal base
Pblo	Stone block
Pfus	Stone spindle whorl
Ppla	Stone plaque
Psce	Stone seal
Vsce	Glass seal

Since the publication of *HoChyMin*, it seems to have become the common practice to cite the inscriptions by absolute sequential number. In this thesis, however, I opted to refer to them by label. While this may seem less economical in terms of space, labels are more informative and probably easier to associate to the actual inscriptions. Hopefully, this will become clear in Chapter 3, where they are useful to infer the epigraphical support of particular paleographical variants in the inter-script comparative tables.

One potential shortcoming of the system, noted by Olivier himself, is that the typological descriptions are in a certain measure arbitrary and empirical.[17] For example, in the case of ENKO Apes 001 the name implies that the object inscribed is a weight ("pes"), but this interpretation is debated and it has also been proposed that the support

[16] Since the function of these objects is still a matter of debate, here I use the neutral term "ball" as a direct translation of the French *boule*, preferred by some authors.
[17] *HoChyMin*: 22.

was actually used as a label.[18] Still, such cases are a minority and will be duly signaled. To facilitate the reading of this dissertation and comparisons with other publications, the correspondence between sequential numbers and labels is given in the Concordance that precedes this Introduction.

For reasons of economy, in the transnumeration of sign-sequences I use a system slightly different from the one found in *HoChyMin* and now followed on publications on Cypro-Minoan. Signs whose numbers are below 100 are transnumerated with only two digits. For example, the sign-group 102-009-082-085 is here given as 102-09-82-85. In tentative transliterations, untransliterated signs are kept in transnumeration but preceded by an asterisk (*): e.g. *i*$^{?}$-*li*$^{?}$-*71-*ni*$^{?}$.

Chronology

I refer to the conventional relative chronology scheme for the Bronze and Iron ages of Cyprus. For the absolute chronology, I use the dates of L. Åström and P. Åström (1972).[19] The Late Bronze Age absolute dates do not derive from radiocarbonic measurements, but rather from the seriation of Mycenaean pottery. The latter is correlated with the Aegean mainland sequence for the same type of ceramics, which in turn is matched with the Egyptian dynastic dates (assisted by astro-chronological data and links with the Mesopotamian regal years). It must be noted that the dynastic chronology of Egypt is itself divided into competing schemes and far from unquestionable.[20]

The Aegean horizons are of importance for assessing the relationship of Cypro-Minoan with Linear A (Chapter 3). To facilitate interregional comparisons I opted to use also the historical absolute chronology, whose methodological foundations we have just seen. Specifically, I follow Warren and Hankey (1989). The reader should be fully aware of the problems and limitations of all current chronological schemes, and particularly that there is a continuing debate between proponents of a "high" Aegean chronology, based on radiocarbon dates, and a "low" one, which corresponds to the historical periodization.[21]

[18] *CMI I*: 53-56.
[19] L. Åström and P. Åström (1972: 762).
[20] Bietak and Höflmayer (2007: 23-24).
[21] Bietak and Höflmayer (2007: 23-24).The debate has been ongoing since the 1980s and shows no sign of waning. One just needs to look through the recent issue no. 88 (2014) of the review *Antiquity* to see proof of it. The controversy revolves around the radiocarbonic dating of the *Thera*/Santorini eruption. In terms of relative chronology, this event is associated with the late LM IA period, on one hand, and has been dated to around the beginning of the Egyptian New Kingdom by a wide range of archaeological evidence, on the other hand. Based on ^{14}C measurements, some scholars place the Santorini disaster in the later part of the 17th century BCE, raising the historical date by around a hundred years.

Table I 1: Cypriot chronology from the late Middle Bronze Age to the Classical period.[22]

Relative Chronology		**Absolute Chronology**
Middle Cypriot III	(MC III)	1700-1600 BCE
Late Cypriot IA	(LC IA)	1600-1525 BCE
Late Cypriot IB	(LC IB)	1525-1425 BCE
Late Cypriot IIA	(LC IIA)	1425-1360 BCE
Late Cypriot IIB	(LC IIB)	1360-1320 BCE
Late Cypriot IIC	(LC IIC)	1320-1190 BCE
Late Cypriot IIIA	(LC IIIA)	1190-1100 BCE
Late Cypriot IIIB	(LC IIIB)	1100-1050 BCE
Cypro-Geometric I	(CG I)	1050-950 BCE
Cypro-Geometric II	(CG II)	950-850 BCE
Cypro-Geometric III	(CG III)	850-750 BCE
Cypro-Archaic	(CA)	750-480 BCE
Cypro-Classical	(CC)	480-310 BCE

Table I 2: Minoan chronology.[23]

Relative Chronology		**Absolute chronology**
Middle Minoan IB	(MM IB)	1900-1800 BCE
Middle Minoan IIA	(MM IIA)	1800-1750 BCE
Middle Minoan IIB	(MM IIB)	1750-1700/1650 BCE
Middle Minoan IIIA	(MM IIIA)	1700/1650-1640/30 BCE
Middle Minoan IIIB	(MM IIIB)	1640/30-1600 BCE
Late Minoan IA	(LM IA)	1600/1580-1480 BCE
Late Minoan IB	(LM IB)	1480-1425 BCE
Late Minoan II	(LM II)	1425-1390 BCE
Late Minoan IIIA1	(LM IIIA1)	1390-1370/60 BCE
Late Minoan IIIA2	(LM IIIA2)	1370/60-1320 BCE

[22] Based mainly on L. Åström and P. Åström (1972: 762) for MC III-CG I and (Iacovou 2008: 626) for CG I-CC.
[23] Absolute dates after Warren y Hankey (1989: 169).

Phonological notations

Although an attempt was made to follow the conventions of the respective fields when presenting phonological interpretations of material from ancient and modern languages, their variety and, often, discrepancies, complicates the task. Thus, whenever possible preference was given to the IPA (International Phonetic Alphabet), which is included in Appendix F.

Chapter 1

CYPRO-MINOAN: PAST AND PRESENT

1.1 PAST SCHOLARSHIP AND ATTEMPTS OF DECIPHERMENT

The aim of this section is not just to provide a historical summary of Cypro-Minoan studies. It also intends to integrate past research on the script into the larger framework of Aegean-Cypriot syllabic epigraphy, since the scripts related to Cypro-Minoan are crucial for its understanding. In addition, the history of ideas is of importance for ongoing research in terms of methodology. If we look at the work of more than a century of scholarship as a whole, we will see that some patterns emerge. They are not limited to the usual undisciplined attempts of decipherment, commonly based on etymological approaches and unjustified linguistic identifications. Some methods were more sought than others and their merits, as well as their shortcomings, need to be reassessed. However, this survey is not exhaustive and re-examination of the results of past scholarship is mostly not undertaken here: by necessity, many points are resumed, detailed and discussed subsequently in the analytical chapters.

1.1.1 The discovery of Cypro-Minoan and its prelude (1811-1909)

The first of the Aegean-Cypriot syllabic scripts to be discovered by contemporary scholarship was the so-called "Cypriot Syllabary", to which I will refer to here as "Cypro-Greek" to avoid ambiguity.[24] The first inscription was found at Palaepaphos in 1811 and was considered Phoenician until in 1852 Honoré Théodoric d'Albert, duke of Luynes, demonstrated that it was a hitherto unknown writing system of Cyprus. The decipherment of the new script came later in the century after the discovery of a bilingual and biscriptal inscription from Idalion (now labelled *ICS* 220), written in the known Phoenician consonantal alphabet and the obscure Cypriot script (1869). By 1871, George Smith, an Assyriologist, had identified the new writing system as a syllabary and assigned correct or nearly-correct values to a number of signs. He succeeded in recognizing in the first line of the Cypriot text four words familiar from the Phoenician version: the Cypriot place-names Idalion and Kition, the name of king Milkyaton and the Greek-looking title *pa-si-le-wo-se* 'king'.[25] His partial decipherment was advanced during the same decade by six other scholars who established beyond doubt that the language behind the syllabary was a Cypriot dialect of Greek, akin to the Arcadian dialect of Greece. The contributions of Moritz Schmidt deserve a special

[24] Egetmeyer (2010: 1). See also Valério (2014a).
[25] Smith (1872). See the accounts in Bréal (1877: 183-184), *ICS*[2]: 21, Pope (1999: 14-130) and Egetmeyer (2010: 1-2).

mention, as his method of decipherment was largely combinatorial. Where sign values remained unknown, Schmidt progressively made out plausible Greek words by means of experimental values in a process of trial and error, in the end reaching an almost full decipherment.[26]

By the end of the 19th century, the essential structure of the Cypro-Greek syllabary was established, but some unknowns remained due to regional variations in the forms of some signs. It also became clear that while the majority of the inscriptions notated the ancient Cypriot Greek dialect, a small number of them (mostly from the site of Amathus and dated to the 4th century BCE) were written in an incomprehensible language.[27] The latter was assumed to be indigenous and became known as "Eteocypriot", a term coined by Friedrich on the basis of the Homeric "Eteocretans" (the ethnonym of an autochthonous people of Crete) that is nowadays conventional.[28] As regards the script, the discovery and decipherment of Cypro-Greek left contemporary scholars puzzling over its origins. Almost every known script of the neighboring regions was proposed as a relative, but for some time the problem stood.[29]

In the meantime, Arthur Evans was in Greece looking for traces of pre-alphabetical writing used by the recently-discovered "Mycenaean civilization". After finding some gems of Cretan provenance bearing what appeared to be script signs, he first claimed to have identified a "system of picture writing" (1894), and his explorations on Crete (1895) would convince him further of his theory.[30] Starting in 1900, the undertaking of actual archaeological excavations at Knossos led to the discovery of numerous inscribed objects. In his famous work *Scripta Minoa I* (1909), he theorized a whole family of Minoan scripts with four successive and evolving types of writing: "hieroglyphic or conventionalized pictographic" (Class A and B) and "linear" (Class A and B).[31]

Meanwhile, British excavations at the Cypriot site of Enkomi (1896) yielded three inscribed clay balls dated to the Bronze Age. Evans himself had examined this new material in 1900[32] and ended up publishing it in *Scripta Minoa I*. The three balls, as well as a gold ring from a tomb at Hala Sultan Tekke (today not considered a *bona fide* inscription), presented him with a repertoire of fifteen Bronze Age signs, which he believed to be identical with both his "Minoan" linear scripts and the 1st-millennium

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[26] See Pope (1999: 130-134), who thinks Schmidt must have had "in front of him, though he does not say so, a clearly drawn syllabic grid, showing the syllables already known with some confidence, and the gaps still to be filled." For a fuller account of how the decipherment was undertaken, see the bibliography in fn. 25.

[27] *Ibid.*

[28] Friedrich (1932: 49). See also O. Masson (2002-3: 81), who credits V. Gardthausen with suggesting this label to Friedrich.

[29] Upon investigating the "Hittite" Hieroglyphs, Archibald H. Sayce theorized about an "old Asianic syllabary" which he thought was the source of different Near Eastern scripts, including Cypro-Greek (*ICS*^{2}: 31, with references; Pope 1999: 134-135).

[30] Evans (1894; 1895; 1909: 9-10); Chadwick (1970, 7-8).

[31] Evans (1909: 8-54).

[32] Hirschfeld (2012: 373-374); *CMI* I: 9.

BCE syllabary of Cyprus, to the point of considering them part of a distinct system that linked the two branches. As an expression of this view Evans, who also believed the Minoans to have actually settled in Cyprus, dubbed this eastern offspring of the Aegean scripts "Cypro-Minoan."[33]

1.1.2 The first steps in the research (1910-1951)

Little progress was achieved on the new script in the two decades following the publication of *Scripta Minoa I*. In 1935, Evans had only three more inscriptions at his disposal: a fourth clay ball and a fragment of a clay *pithos* from Enkomi (ENKO Abou 025 and Avas 001), as well as a cylinder-seal from Ayia Paraskevi (PARA Psce 001). These yielded only sixteen signs.[34]

The situation began to change shortly after. In 1937, two works, one published by Casson and the other by Persson, contributed new Cypro-Minoan material from recent excavations and devoted attention to it. Casson compiled the first signary of the inscription through an analysis of different classes of inscribed objects, taking into consideration aspects such as ceramic typology, the inscribing techniques, the objects' find-spots and the number of occurrences of each sign. His list included hypothetical phonetic values for some characters, stemming from tentative interpretations of the paleographic evolution from Cypro-Minoan to Cypro-Greek. Innovative as it was, Casson's work had one important methodological shortcoming: the signs in his list were drawn in the most linear manner and nowadays it is clear that some do not depict the characters accurately.[35] Persson, on the other hand, was the first to notice variations of *ductus* dependeding on writing media, even though his observations were only the means to compare Cypro-Minoan signs with those of Cypro-Greek and infer phonetic values. As Casson's, his drawings were schematized and made the signs look more linear than they really were. Another shortcoming of his work was the combined use of the acrophonical principle and the etymological approach as the basis to "read" a small number of two-sign sequences and interpret them as Anatolian personal names.[36]

Both Casson and Persson argued that writing, i.e. Cypro-Minoan, had been introduced in Cyprus by "Achaean" immigrants, their opinions differing as per the exact date, but in an influential article published in 1941, John Franklin Daniel would refute that view. With new dates based on the stratigraphical sequence of the recent excavations at the site of Kourion, Daniel argued that not only writing had been introduced before the coming of Greek-speaking immigrants in the mid-2nd millennium

[33] See Evans (1909: 68-77). It is noteworthy that Evans saw the Cypriot syllabary unfit for Greek, so he further claimed the script was "originally devised for a non-Hellenic language", the supposed insufficiencies then being the result of its adaptation another tongue.
[34] Evans (1935: 758-763, fig. 744), apud *CMI* I: 10. On the dating of the Ayia Paraskevi cylinder seal, see also Daniel (1941: 250).
[35] Casson (1937: 96-107), apud Palaima (1989a: 143) and *CMI* I: 10-11.
[36] Persson (1937: 601-605, 617), apud *CMI* I: 11-12.

BCE, it actually declined around the time the newcomers arrived (ca. 1150-1050 BCE).[37]

But Daniel's article had other merits. Like Casson, he sought to classify Cypro-Minoan according to the typology of the inscribed objects, but, at the same time, he dwelled on paleographical questions, like Persson.[38] Furthermore, he sought to distinguish between signs "which possessed fixed syllabic values" (syllabograms) and "potters' marks or monograms" (logograms).[39] Finally, having concluded that Cypro-Minoan was derived specifically from Linear A, Daniel also engaged in inter-script comparisons. Although many of his identifications would be refuted by the decipherment of Linear B, he believed 36 of the then-known Cypro-Minoan signs were borrowed from the "Minoan" script and that 20 of these passed onto Cypro-Greek.[40]

1.1.3 Advances and shortcomings (1952-1989)

In 1952, Linear B became the second syllabary of the Aegean-Cypriot group to be deciphered, this time on the Aegean side. The Mycenaean script was now also a source of insight into the still obscure Linear A. But the 1950s were exciting for other reasons as well. It was a decade prolific in findings of lengthier Cypro-Minoan inscriptions, particularly clay tablets: ENKO Atab 003 and 004 in 1953, ENKO Atab 001 and RASH Atab 001 through 003 in 1955, and RASH Atab 004 in 1956. Ventris himself produced drawings of ENKO Atab 003 as well as a list of its signs.[41]

In the period considered in this section, Olivier Masson, first, and Émilia Masson afterwards, published extensively on Cypro-Minoan. In face of the increase of findings, O. Masson (1957a) published, among other contributions, a catalogue of Cypro-Minoan inscriptions with bibliographical information and nearly thirty useful photographs. In the 1970s and 1980s, É. Masson contributed several publications, the most significant of which was *Cyprominoica* (1974), which features the first widely used sign-lists, her influential classification of Cypro-Minoan in three sub-scripts and an attempt of decipherment of the tablet RS 20.25 from Ugarit (now labeled RASH Atab 004) as a list of Semitic and Hurrian personal names.

É. Masson's classification of Cypro-Minoan is primarily a division into two main categories. The first is "CM 0" or "archaic Cypro-Minoan", in her opinion a script represented by 30 signs from only five inscriptions, presumably the earliest ones (16th-15th centuries BCE) and more analogous to the syllabograms of Linear A in style.[42] It is her second category that encompasses all the later, more "evolved" Cypro-Minoan

[37] Daniel (1941: 250-252). The dates given here are those put forward by the author at the time.
[38] Daniel (1941: 252ff).
[39] The most compelling of his criteria was: if a sign occurs in "polysyllabic inscriptions" it probably has a sound value, i.e. it is a phonogram (Daniel 1941: 253).
[40] Daniel (1941: 254ff).
[41] Apud Dikaios (1953: 234-236, figs. 1-3).
[42] É. Masson (1974: 11-12, fig. 1).

inscriptions (14th-11th centuries BCE). According to É. Masson, these would represent three separate (sub)scripts: CM 1, CM 2 and CM 3. In this tripartite scheme, CM 1 was defined by É. Masson as the main Late Bronze Age script of Cyprus, used throughout the whole of the period by the indigenous Cypriots and comprising the majority of the documents, a heterogeneous body of inscriptions made on typologically-mixed materials.[43] The other two subscripts were theorized as ramifications of CM 1. CM 2 would be a script limited in space, medium and time, comprising four clay tablets, or fragments thereof, from Enkomi. É. Masson dates them to the late 13th or early 12th century BCE, although their archaeological context is problematic.[44] Two of the fragments were joined as one tablet (ENKO Atab 002) in 1980,[45] but this widely-accepted join is now contested by Ferrara (see 1.2.1). Masson argues that CM 2 is an adaptation of CM 1 for a different language, motivated by the installation of a group of immigrants in the island. Specifically, she hypothesized a Hurrian-speaking population from Cilicia.[46] Finally, CM 3 would denote a script that Masson saw as being restricted to four inscriptions from Syria, three certainly from Ras Shamra/Ugarit (RASH Atab 001 and 004, and RASH Mvas 001) and one of uncertain context (SYRI Psce 001).[47] This alleged subscript would also be limited in space, in this case to Ugarit, as an adaptation of CM 1 developed under the influence of the Ugaritic language.[48]

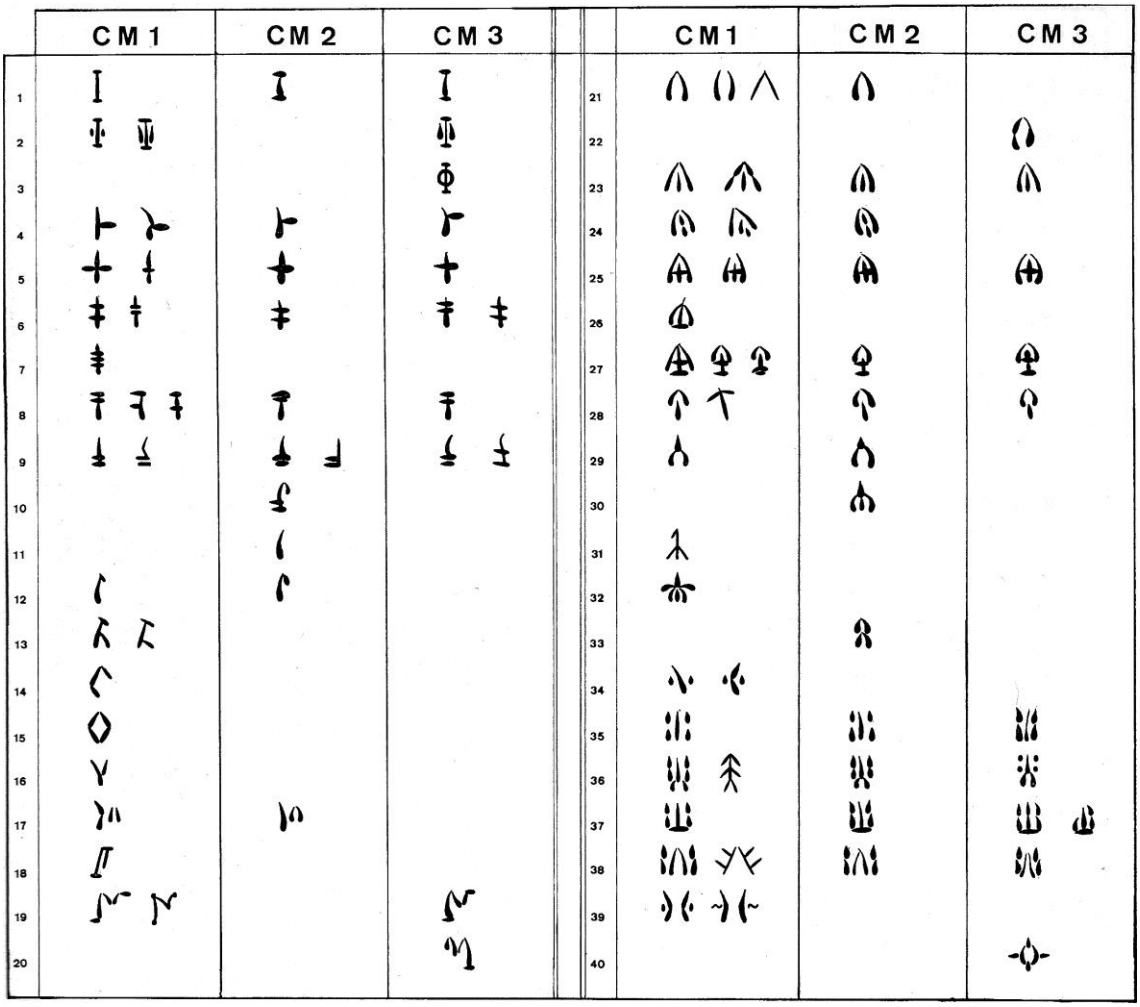
This classification frames the sign repertoires that É. Masson for CM 1-3 (see Figures 1.1-1.3). These comprise 114 sign shapes individualized and listed according to a *formal* principle. For her grids, Masson used drawings that intend to represent the characters as they appear on the inscriptions, even though, as we will see (2.3), these are not always faithful. For many signs, she provided more than one example, a choice that reflects some concern with *paleographical* variation. For this reason, her tables cannot be considered normalized repertoires, yet, although they appear to have the intention of capturing a certain range of variation, this purpose is not fully pursued either.

Not long before, Meriggi (1972) had produced independently his own inventory of Cypro-Minoan, in which signs were organized by basic shapes and numbered according to a system of numeration that followed approximately that of Linear B. However, under each basic sign shape Meriggi gathered additional forms were gathered as "variants" listed by means of letters, so that e.g. sign *11* had a typical form and five variants (*a*, *b*, *c*, *d* and *e*). Although Meriggi recognized that these variants would probably turn out to be different graphemes, he believed his system had the advantaged of allowing similar signs to maintain close numbers and positions in his grid. Nevertheless, intricated as it was, Meriggi's repertory never became as accepted as É.

[43] É. Masson (1974: 11-16, and figs. 2-4, first column).
[44] See *CMI* I and II.
[45] Michaelidou-Nicolaou (1980).
[46] É. Masson (1974: 11-16, 47-55, and figs. 2-4, second column). See also É. Masson (1972: ; 1979:)
[47] É. Masson (1974: 12, 19-38, and figs. 2-4, third column).
[48] É. Masson (1974: 16, 45).

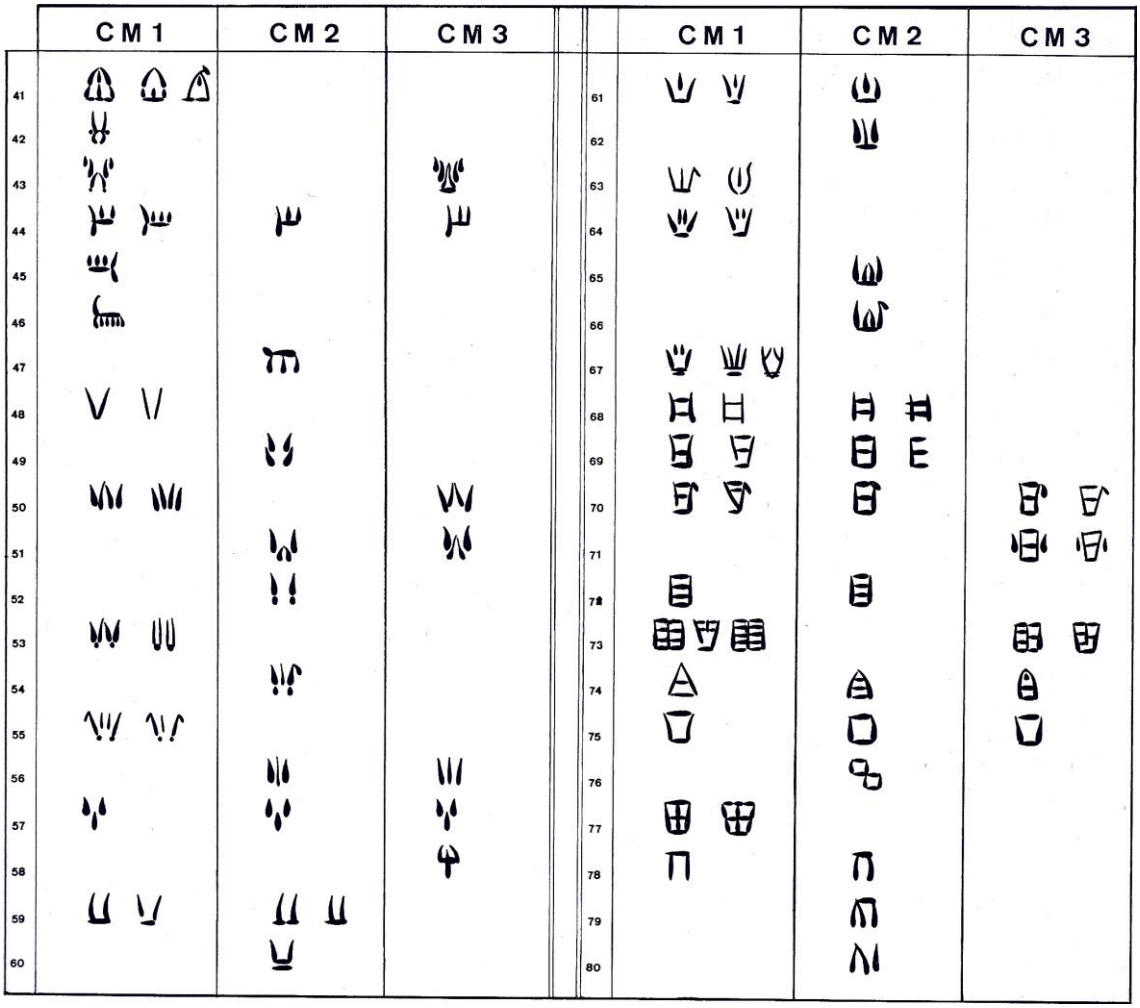
Masson's. In several cases signs listed separately were demonstrably the same, whereas others that were distinct were presented as variants.[49]

Figure 1.1. É. Masson's sign repertory: CM 01-40.[50]



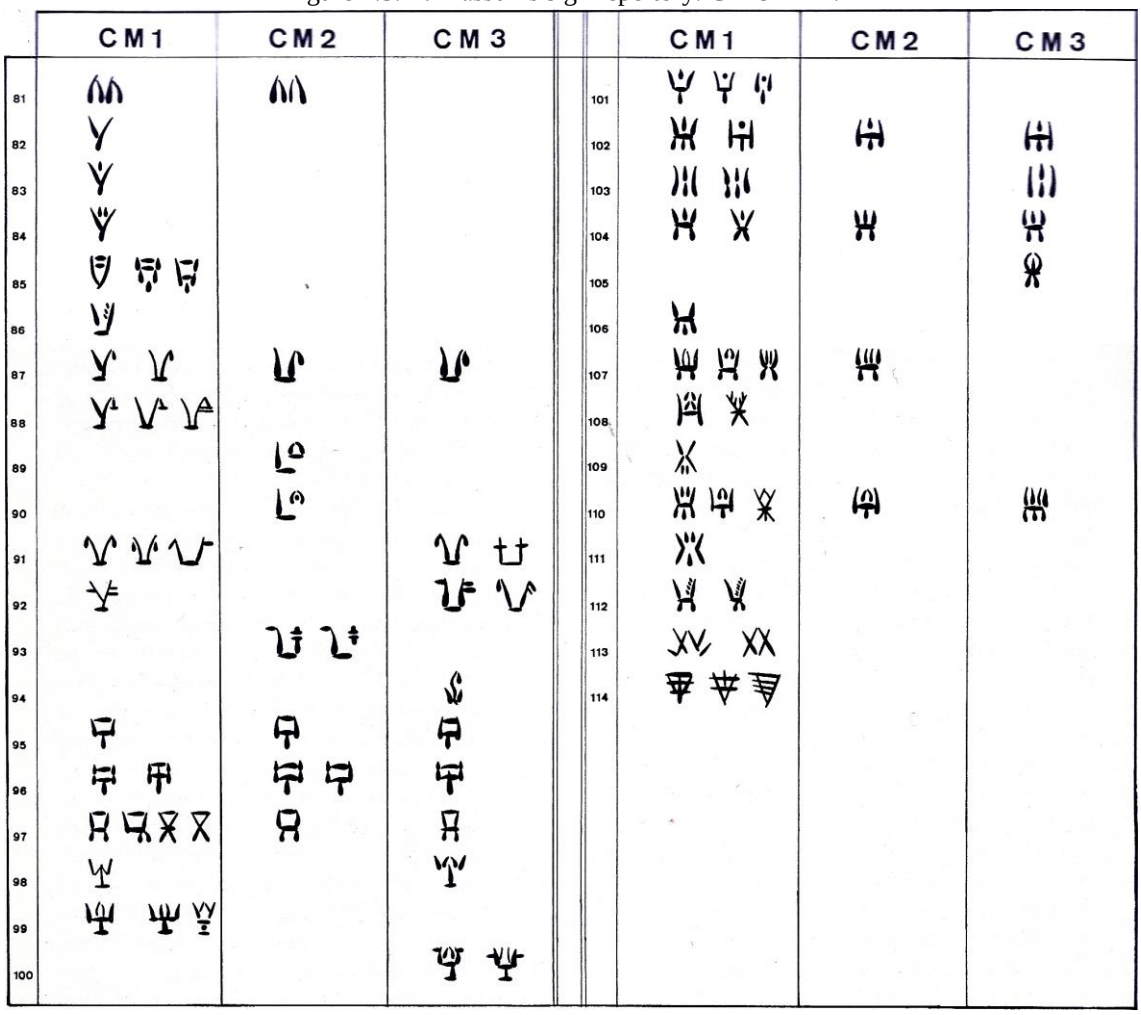
[49] Meriggi (1972b).
[50] É. Masson (1974: 13, fig. 2).

Figure 1.2. É. Masson's sign repertory: CM 41-80.[51]



[51] É. Masson (1974: 14, fig. 3).

Figure 1.3. É. Masson's sign repertory: CM 81-114.[52]



Finally, one must highlight É. Masson's study of RASH Atab 004. This clay tablet was found in 1956 in Ugarit, particularly in the archive attributed to an influential Ugaritian named Rap'ānu. The tablet was first published by O. Masson in 1969 and, as we will see in Chapter 5, from the start scholars agreed that its textual structure was suggestive of an inventory, probably a "nominative list", of a type well-known among the cuneiform documents found at the site. A much-repeated dissyllabic sequence of the inscription, 51-28, was soon identified by Meriggi and É. Masson as a "key-word" to interpreting the text, and both scholars agreed that it most probably meant "son" and served to indicate the patronymic of the individuals presumably listed in the tablet (see 5.4.2.2). The inscription will be examined in detail in Chapter 5. For now, I would like to summarize É. Masson's interpretative analysis, her method and her conclusions. She began with sound values for nine signs, obtained mostly by comparative analysis with Linear B and Cypro-Greek, except in the case of three mono-vocalic signs (38 > *u*, 102 > *a*, and 104 > *i*), whose high frequency in initial position was also considered. In this way, É. Masson transliterated one sign-sequence on a clay ball from Enkomi as *i-li-pa-*

[52] É. Masson (1974: 15, fig. 4).

li, which she could compare to the Ugaritic name *ilbʿl* ‘My god is Baʿlu’. This was in line with her earlier theory that the clay balls contained personal names and made her confident about the validity of her first tentative values. É. Masson proceeded to transliterate the tablet from Ugarit. Where she could not read a sequence in full, she used a combinatorial method whereby she sought to fill the lacunae by assigning to the untransliterated syllabograms values that might yield Semitic and Hurrian personal names known from the cuneiform documents found at the city. In the end, the proposals of É. Masson amounted to a grid with 29 transliterated signs (seven of them only partially), as well as readings for seventeen personal names and three appellatives.[53] As regards the key-sequence, 51-28, she assumed that it concealed the Ugaritic word for ‘son,’ *bn*, and it was based on this assumption alone that she transliterated it as *p*/*bi*-*nu*. However, neither sign value, CM 51 → *p*/*bi* and 28 → *nu*, produced any compelling onomastic identification that might have corroborated them. In fact, the validity of her readings in general was difficult to confirm, but the picture of the script she painted was somewhat disconcerting. To provide just one example, even though both Linear B and Cypro-Greek have only one series of syllabograms for a velar stop, *k*, which represented /k/, /g/ and /k^{h}/, É. Masson postulated a stop series *k* alongside a fricative *h*, as a distinct fit to write a Semitic language. Moreover, she assigned the values *ki* and *ḫi* to signs CM 37$^{(?)}$ (𐄩) and CM 87 (𐄧), whereas CM 70 (𐄦), which many agree is cognate with Linear B *ki* (𐀁) and Cypro-Greek *ki* (𐠊), was transliterated as *mi*. In other words, her scheme was surprisingly irregular: some of the Cypro-Minoan syllabograms with formal counterparts in other Aegean and Cypriot scripts were assigned phonetic values identical with those same counterparts (e.g. the V signs), but others would appear completely disruptive.

In 1976, Claudio Saporetti published a relatively extensive study of Cypro-Minoan. Although it was mostly consisted of comparing the signs of the inscriptions with the deciphered syllabograms of Linear B and Cypro-Greek and extracting tentative values from them, it also contained some “internal” insights. Although É. Masson had sowed the seeds of the idea through some of her tentative values, it is in the work of Saporetti that we find a clear distinction between a Cypro-Minoan *l* series whose signs are a continuation of the Linear A *r* series and a wholly innovated liquid series, *r*, with counterparts only in Cypro-Greek. É. Masson had detected a set of sequences in the clay tablet ENKO Atab 004 that possibly showed inflection: 68-25-**75** (B.11), 68-25-**96** (A.lat.sup.), 68-25-**97** (B.10) and 68-25-**33**-**25** (B.17). This seemed to confirm internally the sign values that Saporetti obtained by comparison with Cypro-Greek syllabograms: CM 33 (𐄚) = *re* > CGk *re* (𐠴), CM 75 (𐄕) = *ra* > CGk *ra* (𐠰), CM 97 (𐄘) = *ro* > CGk *ro* (𐠸). The sequences seen by É. Masson would read: *nu*$^{?}$-*ka*-***ra***, *nu*$^{?}$-*ka*-**96**, *nu*$^{?}$-*ka*-***ro*** and *nu*$^{?}$-*ka*-***re***-*ka*.[54] Saporetti also used the Ugarit tablet RASH Atab 004 as a ground to test his readings and proposed some interesting onomastic identifications, such as 104-09-

[53] See É. Masson (1974: 29-46) for the full account.
[54] Saporetti (1976: 99).

55-09-70 → *i-li-mi-li-ki* = Ugarit *ilmlk* and 21-82-75-51 → *ko-ša-ra-bi* = Ugarit *Kušarabi*.[55] His readings were still in consonance with some of É. Masson's proposals (104-09- = *i-li-* for Ugaritic /ʾIlī/ 'my god', as in *i-li-pa-li*) and at the same time were more regular with regard to the Aegean and Cypriot cognates: CM 70 (𐄀) = *ki* and CM 87 (𐄇) = *ša*. In addition, 21-82-75-51 → *ko-sa-ra-bi* seemed to provide some degree of support to É. Masson's unproved assumption that the tablet's repeated sequence 51-28 was Semitic *p*/*bi-nu* 'son'. However, Saporetti's proposals were also entangled with many less compelling readings of Cypro-Minoan sequences and speculation on the identification of certain words in Linear A, which to a large extent make it difficult to evaluate his results.

In a short paper published in 1981, Werner Nahm pursued the direction taken by É. Masson and Saporetti. Nahm's study consisted of three analytical stages. The first was comparative: endorsing the premise that Cypro-Minoan consisted of three subscripts (the CM 1-3 of É. Masson), but treating them all as closely related, he compared it to Linear A and Cypro-Greek. To the eleven sign values that seem already widely accepted by other scholars Nahm added twelve others drawn from his comparisons. [56] In the second stage, Nahm suggested additional phonetic values by means of four "structural" methods: (1) signs with high sequence-initial frequency were identified as V syllabograms; (2) the vocalic values *i*, *e*, *o* and *u* where suggested for CV signs that were recurrent before ones suspected of denoting glides (i.e. in hypothetical sequences of the types C*i*-*y*V, C*e*-*y*V, C*u*-*w*V and C*o*-*w*V); (3) some CV signs were proposed as sharing the consonant where propitious traces of inflection were found; (4) CV signs were claimed to contain the same value in sequences where possible consonant clusters were spelled out with "empty" vowels equal to the "true" vowels by means of regressive spelling (e.g. *ka-la* for /kla/).[57] In total, Nahm arrived at values for 42 signs. The last stage of his study involved testing them on RASH Atab 004, whose characteristics made it ideal for testing any decipherment. His results consisted of interpretations of 27 sequences, the majority presumable Semitic and Hurrian personal names of the kind known from the cuneiform documentation found at Ugarit. Despite some of Nahm's claims being too hasty, it is worthwhile to highlight a small number of his readings and respective onomastic identifications, two of which had already been put forward by Saporetti (see 5.4.2.4 for an in-depth reassessment):[58]

> 55-25-51-40 → *ma-ka-pi-yi*: Ugaritic *mʕqby*, the toponymic adjective of *mʕqb* = ^{URU}*Ma*(*ʔ*)*qab*-, a village.
>
> 104-09-71-100 → *i-li-ya-ni*: Ugaritic personal name *ilyn* = DINGIR-*ia-nu*.

[55] Saporetti (1976: 102).
[56] Nahm (1981: 52-53, Abb. 1).
[57] Nahm (1981: 55-59).
[58] Nahm (1981: 59-62).

104-09-04-55-96 → *i-li-ta-ma-ri* : Ugaritic personal name *il*$_{\underline{t}}$*tmr*, where -$_{\underline{t}}$*tmr* is known to correspond to syllabic *-iš-tam-ru* /-ɪθtamru/.
21-82-75-51 → *ko-ša-ra-pi:* Ugaritic personal name *ku-šar-a-bu* (genitive *ku-šar-a-bi*).
104-09-55-09-70 → *i-li-ma-li-ki*: Ugaritic personal name *ilmlk.*
19-91-73-23 → *u-mi-mo-ti*: Ugaritic personal name *ummt.*

From a methodological point of view, three reasons make these identifications interesting: (1) they correspond to West-Semitic place and personal names well-attested in Ugarit and contemporary with the tablet; (2) they all involve sequences of four or five syllabograms whose length reduces the chance that Nahm achieved them by accident; (2) some of them repeat syllabograms (*i, li, ma,* and *pi*), lessening the factor of chance even further.

In spite of these results, Nahm's proposals have not met acceptance. One reason may have been that he read the key sequence of the tablet as *pi-ru* and made the claim that it was an Old Aramaic word for 'son', which is historically implausible (see 5.4.2.4.1 for a refutation). Another discouraging factor may have been that Nahm's article dedicated only six pages to the methods that suggested the phonetic values. The impression is often that we see the results but not the process, and not all of them are equally compelling, particularly as far as paleographical comparisons are concerned. Finally, Nahm's identifications were not accompanied by a thorough linguistic discussion of the Semitic and Hurrian onomastics invoked or a presentation of the rules of orthography involved in their spelling with the Cypro-Minoan script. As a consequence, nowadays Nahm's proposals are rarely used or evaluated by either Cyprologists[59] or Ugaritologists[60]. Nahm published a follow-up of this first study in 1984, in which he focused solely on the CM 2 inscriptions, but its fate was similar.

In general, this period was also prolific in undisciplined attempts at decipherment or alleged contributions to it. Different known languages were "identified" behind Cypro-Minoan and, unsurprisingly, those close to Late Bronze Age Cyprus, in time or space, were the preferred candidates: the Indo-European Anatolian languages (particularly the best-attested Hittite), É. Masson's CM 2 Hurrian and, of course, Mycenaean Greek.[61] The fact that these attempts linked Cypro-Minoan with distinct languages and linguistic families only emphasizes their improbability.

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[59] A rare exception is Egetmeyer (2013a: 112-113): "…his whole presentation is difficult to use, because it is too tolerant in the comparison of sign forms and embedded in premature discussions on decipherment following E. Masson and C. Saporetti." See also Hiller (1985) and Facchetti *et al*. (2013: 64, n. 25).
[60] In *DULAT*: 58, 116, del Olmo and Sanmartín cite "*ilimalik*" and "*isi*$_1$*pali*", two readings of Saporetti followed with slight modifications by Nahm, but they do so through a publication by Woudhuizen (1991).
[61] These include: Sittig (1956), Mann (1960), Ephron (1961), S. Davis (1967), É. Masson (1974), Faucounau (1977; 1988), and Billigmeier (1976; 1979). Faucounau made some interesting comparisons of Cypro-Minoan signs with those of related scripts which will be acknowledge below, but in general his studies are of little useful because he was too tolerant on his proposals: e.g. he pondered sign values of the types CVn and CCV, or assigned more than one value to the same sign. It is not our purpose to describe

In reaction, Thomas Palaima published an important essay on the state of Cypro-Minoan studies in 1989. His most impactant conclusion was that É. Masson's division of Cypro-Minoan into four scripts is most probably "invalid." For Palaima, the theoretical subscripts were "distinguished largely and admittedly through rather superficial judgements about the appearance of the texts in the various categories and through historical-linguistic speculation … ignoring for the most part the practical factors involved in determining sign forms". Furthermore, he thought the inscriptions needed to be presented through a critical corpus that took in due account "typological classes, dates and circumstances of discovery, and palaeographical analysis."[62] Yet, albeit wary of the small size of the Cypro-Minoan corpus, Palaima still saw in it some encouraging advantages for decipherment.[63]

The tremendous debt of the field to these two researchers is incontestable and yet, as Palaima put it, their publications "can be likened to individual, somewhat disconnected chapters in the story of Cypro-Minoan."[64] Émilia Masson, up to then the most prolific researcher of Cypro-Minoan, left the field in the late 1980s[65] and, after the publication of Palaima's seminal article, some years went by before research was revitalized.

1.1.4 Recent progress (1990-2015)

> *We need a unified and standardized corpus of Cypro-Minoan inscriptions that will allow us to see the whole script and its various classes of inscriptions—not subsystems of the script itself—in a clear historical context.*
>
> T. G. Palaima[66]

In 1996, Joanna Smith and Nicolle Hirschfeld founded the *Cypro-Minoan Corpus Project*, an initiative that aimed at studying "the script by means of a complete and widely disseminated corpus. The goal was to create an electronic database and a printed publication containing accurate line drawings, photographs, descriptions, and archaeological and epigraphical discussions of all the evidence".[67] As of the fall of 2015 the mentioned corpus had not yet seen the light.[68]

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all these attempts in detail here beyond the extent where a methodological appreciation may be useful to our own undertaking (see below). Hiller (1985) provided a synthesis of these studies, and a critical survey of a smaller number is also found in Palaima (1989a).

[62] Palaima (1989a: 121).

[63] Palaima (1989a: 162).

[64] Palaima (1989a: 147).

[65] *HoChyMin*: 15. The last relevant publications by the author are É. Masson (1987a; 1987b).

[66] Palaima (1989a: 162).

[67] Smith and Hirschfeld (1999: 129).

[68] Smith (2002: 29-30) reports that "Smith and Hirschfeld have been working to draw together all extant Cypro-Minoan inscriptions with detailed photographs, drawings, and descriptions, thus making widespread study of the script possible".

Figure 1.4. Olivier's general table of CM 1-3 "syllabograms" (*HoChyMin*: 413).

	CM 1	CM 2	« CM 3 »		CM 1	CM 2	« CM 3 »		CM 1	CM 2	« CM 3 »
001				040	...	...		079	...		...
002		...		041		...	...	080	...		...
004				044				081			...
005				046		...	...	082			
006				047	...		...	083		...	...
007		...		049	...		...	084		...	...
008				050		...		085		...	...
009				051	...			086		...	...
010	...		...	052	...		...	087			
011				053		...		088		...	...
012			...	054	...		...	089	...		...
012b		...	...	055		...		090	...		...
013				056				091			
015		...	...	058	...	...		092			
017			...	059			...	094	...	...	
019		...		060	...		...	095			
021				061			...	096			
023				063		...	...	097			
024			...	062	...		...	098	...	...	
025				064			...	099		...	
026		...	...	066	...		...	100	...	...	
027				067		...	...	101		...	...
028				068			...	102			
029	...		...	069				103		...	
030			...	070				104			
033			...	071	...	...		105	...	...	
034		...	...	072			...	107			...
035				073		...		108		...	...
036				074	...			109		...	...
037				075				110			
038				076	...		...	112		...	...
039		...	...	078	...		...	114		...	...

The publication of *Éditions holistiques des textes chypro-minoens* (*HoChyMin*) by Jean-Pierre Olivier in 2007 marked a turning point in the field, not just because it was the first extensive collection of Cypro-Minoan inscriptions, but also because it coincided with the beginning of a new period of revitalized research. *HoChyMin* comprises 217 edited inscriptions, with transcriptions (transnumerations) of the texts accompanied in most cases by line drawings as well as photographs. In the main, Olivier followed É. Masson's categorization of the inscriptions. The division into CM 1, CM 2 and CM 3 was maintained, although the latter was modified to include all Cypro-Minoan records found in coastal Syria.[69] "Archaic Cypro-Minoan" was relabeled "CM 0" and now corresponds to a single inscription, ENKO Atab 001, a clay tablet from Enkomi considered the earliest testimony of a script comparable to Cypro-Minoan (see 1.2.4.1 and 3.2.2.2). The repertory of "syllabograms" in *HoChyMin* is a revision of É. Masson's 1974 list, but it is still framed in the tripartite division (see Figure 1.4). The 114 sign shapes of CM 1-3 inventoried by Masson have been reduced to 96, as Olivier suppressed 19 signs (CM 03, 14, 16, 18, 20, 22, 31, 32, 42, 43, 45, 48, 57, 65, 77, 93, 106, 111 and 113) and added a new one (CM 12b). The excluded signs have been assimilated to others, presumably because they were seen as mere graphic variants of other signs, yet, unfortunately, the method behind Olivier's reduction is not discussed in detail. More detailed remarks on specific modifications to É. Masson's signary are made in Chapter 2 and Appendix A.

We owe to Silvia Ferrara the appearance of a second collection of *Cypro-Minoan Inscriptions*, in this instance intended as "archaeological corpus", and therefore different from *HoChyMin* in scope and purpose. The first volume, *Analysis* (2012), here referred to as *CMI I*, is a revised and updated version of Ferrara's doctoral dissertation. It contains two main parts. The second, *The Corpus* (here *CMI* II), contains the catalogue of inscriptions, originally created as a basis for the study presented in the first book. *CMI* I is divided in two main parts. The first one investigates the trajectory of Cypro-Minoan in the settlements where the inscriptions were created and used, by mapping their find-spots and studying their contextual associations. Some types of inscribed objects are reassessed as per their function, especially the so-called *boules* (clay balls).[70] The second part deals with aspects of epigraphy, classification of inscribed objects, paleographical variation of signs, and the rationalization of the signary. Crucial is the reassessment of the criteria underlying É. Masson's division of Cypro-Minoan. Ferrara contends that the existing categorization should be dissolved and that, in all likelihood, the inscriptions represent a single writing system. [71] In parallel, she attempts to mitigate the lack of an analysis of a signary of Cypro-Minoan,

[69] According to the justification given later in Olivier (2013: 11), the new criterion is drawn from Hiller (1985).
[70] *CMI* I: 117-124.
[71] *CMI* I: 151-261, 271.

by conducting a survey of sign variations. The exercise culminates in a "tentative rationalized signary" where a sign-list reducing Olivier's 96 sign shapes to 74 is offered. Yet Ferrara's discussion is not accompanied by an actual mapping of the range of paleographical variation of the characters; rather, it develops around Olivier's normalized drawings. In addition, the assessment of her conclusions is complicated by the inclusion of a table of "Sign Variants" in *CMI* II, which does not always coincide with the arguments and rationalized signary in the first volume. Ultimately, Ferrara cautions that her signary was devised to be consulted "*vis-à-vis* Masson's and especially Olivier's lists" and is not to be taken as the "definitive word on the matter".[72]

The two publications complement each other to a large extent. *HoChyMin* contains holistic editions of the texts, but provides little information on the epigraphic media and almost no archaeological data. Conversely, *CMI* is less suited for paleographical studies, but pays a great deal of attention to the inscribed objects (including illustrations of objects that are not provided by Olivier) and their archaeological contexts. Contextual aspects are essential for understanding any ancient script, but with a group of cryptic inscriptions probably written in an unknown language, as is the case with Cypro-Minoan, knowledge about the function and background of the objects on which they appear becomes a unique source for inferring their meaning (see 5.6). Unfortunately, neither collection is supplemented by a thorough paleographical groundwork in the form of charts mapping the range of variation for each sign, such as those provided by Olivier and Louis Godart for Linear A.[73] This remains the main *desideratum* in the field of Cypro-Minoan studies to this day.

A recent book derived from doctoral dissertation, authored by Philippa Steele, contains an overview of Cypro-Minoan that addresses areas such as lexicology, morphology, phonology and possible linguistic affinities. An interesting point in this survey is that Steele is critical of the criteria on which the alleged subscripts CM 1 and CM 3 were propounded and emphasizes the epigraphical heterogeneity of the corpus. As a consequence, she substitutes É. Masson's categories with a selection of six homogeneous subcorpora for her own analysis: (i) the "very early" inscriptions, (ii) the clay tablets from Enkomi; (iii) the inscriptions from Ugarit; (iv) the late inscriptions from Palaepaphos; (v) the clay cylinders; (vi) and the clay balls.[74] Nevertheless, Steele's stance is that Cypro-Minoan inscriptions are "are almost certainly written in more than one script".[75]

[72] *CMI* I: 254-256.
[73] See *GORILA*.
[74] Steele (2013: 35-47).
[75] Steele (2014b: 129).

Figure 1.5: Tentative rationalized signary of Cypro-Minoan according to Ferrara.[76]

Masson's Sign no.	CM 1	CM 2	CM 3	Masson's Sign no.	CM 1	CM 2	CM 3
001				058	–	–	
002		–		059			–
004				061			–
005				064			–
006				067[110]		–	–
007		–		068			–
008				069			
009				070			
011				071	–	–	
012			–	072			–
013				073		–	
015		–	–	075			
017			–	076	–		–
019		–		078	–		–
021				079	–		–
023				080	–		–
024			–	081			–
025				082			
027				083		–	–
028				084		–	–
030			–	085		–	–
033			–	086		–	–
034		–	–	087			
035				088		–	–
036				091			
037				092			
038				095			
040	–	–		096			
044				097			
046		–	–	099		–	
047	–		–	102			
049	–		–	103		–	
050		–		104			
051	–			105	–	–	
053		–		107			–
055		–		110			
056				114		–	–

In very general lines, it can be said the majority of the authors who nowadays investigate Cypro-Minoan from the epigraphical-paleographical perspective, e.g. Olivier (2013), Duhoux (2009b; 2013), Egetmeyer (2013c) and Steele (2014b), follow to a lesser or greater extent the Masson-Olivier scheme, whereby the inscriptions are taken

[76] *CMI* I: 255, Tab. 5.10.

to represent multiple scripts. However, as regards postulating hypothetical values and decipherment-aimed work in general, they are much more cautious than É. Masson, whereas the proposals of Saporetti and Nahm are rarely addressed or mentioned. They agree on Cypro-Minoan syllabograms having clear cognates in the Aegean and Cypro-Greek syllabaries in only between ten and fourteen cases (see 3.1) If this number is taken literally, it makes Cypro-Minoan largely disruptive with regard to its probable Aegean model, and this in turn features alongside the limitations of the corpus as a prominent obstacle to decipherment. Facchetti, Negri and Notti are the exception in their defense of a multidimensional approach roughly identical with the one put forward by Nahm, and which results in hypothetical transliterations for 37 of the 96 syllabograms in Olivier's list. Ferrara, who focuses primarily on material (archaeological) aspects,[77] opposes the traditional division of the inscriptions into multiple scripts, at least as it is presented by É. Masson and Olivier, and ponders the possibility of a single writing system. Regardless of its share of problems, her very tentative reduction of the accepted sign repertory reflects concerns that the current categorization affects negatively our perception of the signary.

1.2 THE CORPUS

1.2.1 Collected inscriptions

The most substantial body of inscriptions to be analyzed in this thesis consists of those catalogued in *CMI II*, which include the 217 edited in *HoChyMin* (##001-217) plus the 27 additions of Ferrara (ADD##218-244). To these I added nine further inscriptions (ADD##247-253) that are not present in *HoChyMin* and *CMI*: ADD##245 and 246 are two inscribed pottery vessels from Tiryns (Peloponnese, Greece) that recently came to my attention; the other seven documents (ADD##247-253) have been collected from different individual publications (see Appendix A).[78] In collecting the addenda ADD##247-253, I followed the concept of *inscription* used for Linear A in *GORILA*[79] and, in its essence, also in *HoChyMin*: the presence of two or more signs of formal writing, excluding isolated signs executed on objects of varied typology, i.e. "marks". Marks can shed light on the paleographical variation of Cypro-Minoan signs (which is crucial for distinguishing individual characters from mere formal variants), but should be treated separately. *GORILA* has exceptions to this "rule", as has Ferrara's *CMI* for Cypro-Minoan,[80] but I decided to make none because then coherence would demand the

[77] The numerous publications by Joanna Smith and Nicolle Hirschfeld are also mostly concerned with the material and contextual aspects of the inscriptions (see e.g. Smith 1994 and 2002, and Hirschfeld 1999, 2002, and 2012a).
[78] These are furthemore treated jointly in a recent publication (Valério 2014b).
[79] *GORILA* I: xi-xii.
[80] *CMI* I: 18-19; *CMI* II: 3-4.

inclusion of a substantial number of documents of this type. Finally, unlike Ferrara, I opted for incorporating only inscriptions that *are*, not that could be, Cypro-Minoan. For this reason, inscribed objects which have been classified as such, though not consensually (such as e.g. a gold ring from Hala Sultan Tekke[81] and an ostrakon from Ashkelon[82]), were not considered.

Following these criteria, some of the new items listed by Ferrara should, for the sake of coherence, be dismissed as inscriptions.[83] APLI Psce 001 (ADD##219), ENKO Apes 002 (ADD##222), ENKO Apes 003 (ADD##223) and ENKO Mins 003 (ADD##228) bear only single signs and therefore are to be discounted. The seal IDAL Psce 001 (ADD##232) was included by Ferrara because in the past the literature "deemed it a *bona fide*" inscription, consisting of two possible signs; yet the latter have no valid correspondence with well-known sign shapes of Cypro-Minoan, and so I would exclude it as inscription. Likewise, I agree that the signs on seal ENKO Psce 005 (ADD##227) make a doubtful inscription (see discussion in Appendix A). Steele thinks DHEN Avas 001 (ADD##221), an inscription on the handle of a ceramic jug that 05 | 05, is dubious because the series of '+' and the divider behave as a potmark. However, Cypro-Minoan inscriptions of the type SIGN | SIGN appear on a variety of media and even survive in the Iron Age in the Cypro-Greek syllabary, which motivated their inclusion in *HoChyMin*. Compare KITI Avas 020 (ADD##236), where a SIGN | SIGN pattern occurs; notwithstanding the damage that impedes reading the first sign, it was deemed a *bona fide* inscription.[84]

Accordingly, I exclude from the analyses to be undertaken in this thesis six of the objects added in *CMI*, which means that the actual corpus to be considered here totalizes 244 documents.[85] This number excludes also one unepigraphic clay ball (ENKO Abou 016bis) but counts separately the two tablet fragments that have been catalogued jointly as a single tablet ENKO Atab 002 (##207) in *HoChyMin*. This label has been applied to a join of two fragments (inventory nos. 20.01 and 1193) discovered at different loci in Enkomi, but joined in 1980 by Michaelidou-Nicolaou.[86] Olivier points out the lack of evidence supplied in favor of the join and Ferrara argues against this join and her arguments at the very least cast reasonable doubt on its validity.[87] For the sake of cautiousness, I will refer to the two fragments separately as ENKO Atab 002a = ##207A = no. 20.01 (the largest of the two fragments) and ENKO Atab 002b =

[81] First published by Evans (1909: 70, fig. 38); information and picture of the object available at: https://www.britishmuseum.org.
[82] See Cross and Stager (2006: 129-134).
[83] See also Steele (2014b: fn. 2).
[84] *CMI* II: 122-123; 275.
[85] Smith (2002: 30) places the number of extant Cypro-Minoan inscriptions at "more than 250", without providing the source of this figure. Ferrara (*CMI I*: 19; 215-217) notes that it cannot be the *Program in Aegean Scripts and Prehistory* (*PASP*) database because the latter includes only a total of 224 entries. In any case, with the publication of new inscriptions (see 1.2.2) this estimation will probably become a reality in the near future.
[86] Michaelidou-Nicolaou (1980).
[87] *HoChyMin:* 282; *CMI* I: 192-195.

##207B = no. 1193.[88] It should be noticed that side A of the fragment ENKO Atab 002b has not been transnumerated in *HoChyMin*,[89] certainly because its surface "is too eroded to be legible".[90]

According to the counts of Olivier, the 219 Cypro-Minoan inscriptions (that do not include the addenda) contain 3,714 signs.[91] We can thus estimate that the 244 inscriptions considered here have nearly 4,000 signs. These numbers are at odds with the size of the corpora of the deciphered relatives of Cypro-Minoan: the Cypro-Greek corpus contains 1,359 to 1,378 inscriptions containing ca. 14,000 signs,[92] whereas for Linear B we have ca. 6,000 documents yielding around 70,000 signs[93]. The corpus of Linear A is also larger than that of Cypro-Minoan (see the statistics in 3.2.1).

1.2.2 Uncollected and unpublished inscriptions

Fortunately, discoveries and publications of inscriptions have been ongoing.

In a recent report, Egetmeyer, Karnava and Perna (2012) mention a LC II cylinder seal from the Pushkin Museum (Moscow) that bears four Cypro-Minoan signs. The unspecified signs are reportedly "gravés entre deux figures féminines et délimités par deux lignes horizontales". The seal was published by Collon (2005), but is not included in *HoChyMin* or *CMI*.[94] Unfortunately, I did not have the chance to see the publication and could not include it in the present study.

From the hill of Vasili, at Galinoporni (in the Cypriot peninsula of Karpas), a hoard found fortuitously in 2004 with objects dated to "any time within the span of the 13th to 12th centuries (LC II C - III A)" reportedly included a bronze shovel and a Mycenaean stirrup jar with Cypro-Minoan marks.[95] It has also been announced that subsequent excavations on the eroded hill uncovered "a small fragment of burnt clay … bearing a three-line inscription" in Cypro-Minoan.[96]

Excavations in Area 6 of Dromolaxia-*Vizatzia* at Hala Sultan Tekke recently (2010) yielded a new inscription. It consists of "an ostrakon from the rim and neck of a *pithos* with Cypro-Minoan signs, which were incised post-firing". This finding comes from a level (Stratum 2) whose radiocarbonic dates cover roughly the LC IIC/III interval and from a room (Room 2) interpreted as having been used for "various

[88] I prefer to use lowercase "a" and "b" in the labels "ENKO Atab 002a" and "002b" instead of Ferrara's forms with capitals ("ENKO Atab 002 A" and "002 B") to avoid confusion with the terminology already established for opistographic documents, which demands referring to sides "A" and "B".
[89] *HoChyMin:* 282-287. See Appendix A here.
[90] *CMI* II: 106.
[91] Olivier (2008: 605).
[92] See Olivier (2008: 605, 610) and Egetmeyer (2010: 8).
[93] Olivier (2008: 610).
[94] Collon (2005: 86-88) apud Egetmeyer *et al.* (2012: 25).
[95] Bartelheim *et al.* (2008: 169-171) apud Egetmeyer (2013b: 210).
[96] Egetmeyer (2013b: 210).

activities, one of which may have been the decoration of pottery".[97] These inscriptions await publication.

The most relevant discovery, however, was made in the excavations on the plateau Pyla-*Kokkinokremos* in 2012. In Room 3 of Complex 2, two clay tablets written in Cypro-Minoan were found, fallen amidst broken ceramic vessels, including pithoi fragments. One tablet is reported to be opisthographic, with a surface divided by lines and each section filled with text. In addition, its edge is inscribed as well, which the excavators suggest was done for archiving purposes. As we will see, both the ruling and the inscribed edge are features found in Linear A and in the early Cypro-Minoan tablet ENKO Atab 001. The characters are described as "impressed". Conversely, the second tablet was "less deeply impressed" and "somewhat encrusted" so, albeit it is described as similar to the first one, the report does not provide many more details on it. The excavators date the tablets with the destruction or abandonment of Pyla-*Kokkinokremos* to ca. 1175-1170 BCE.[98]

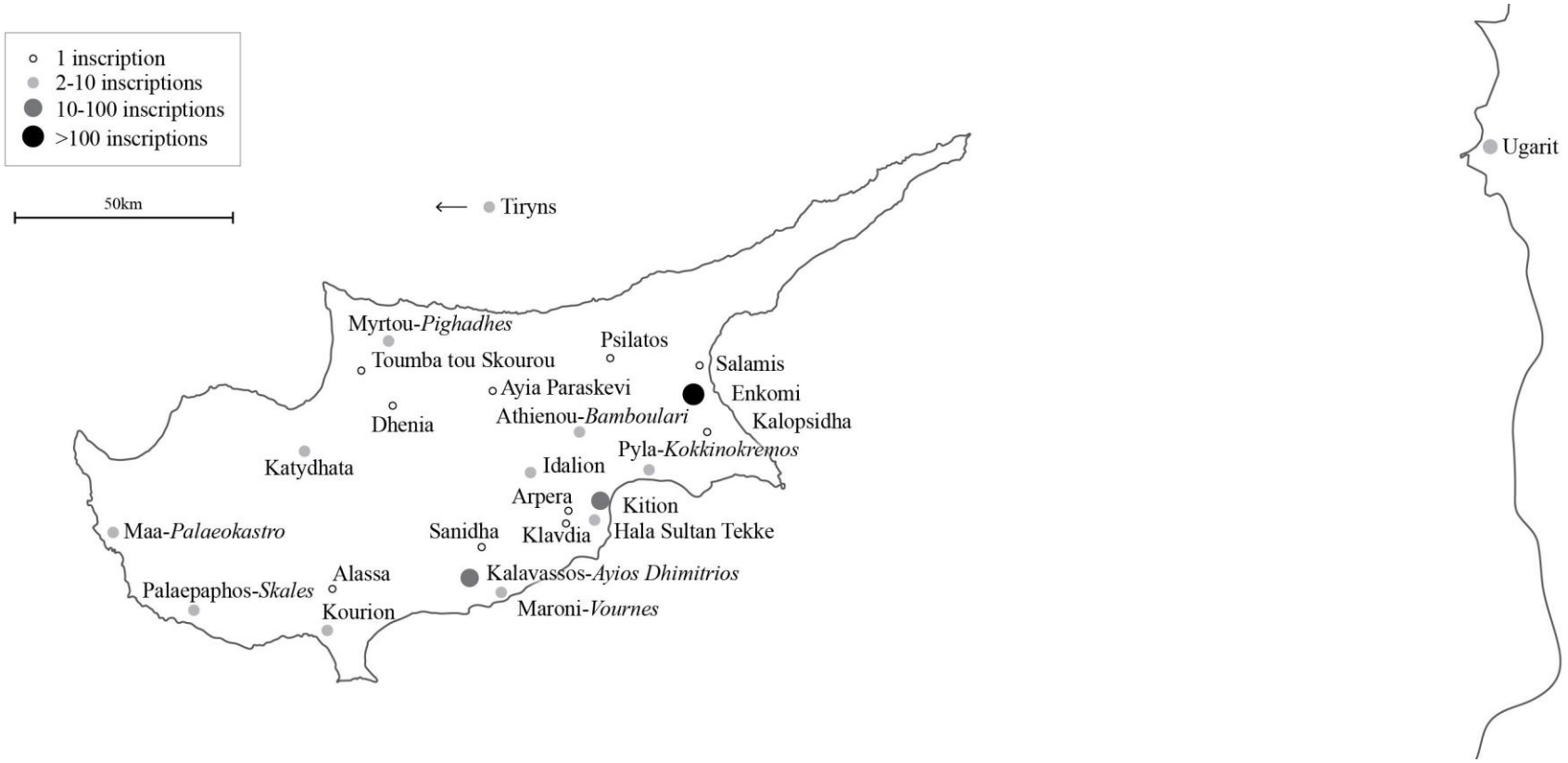
Finally, a new document from Erimi-*Kafkalla* (inv. no. T.2/2) has recently come to my attention. It consists of a three-sign sequence incised onto the shoulder of a ceramic jug dated to the LC II (see Appendix A).[99]

1.2.3 Geographical distribution

Cypro-Minoan inscriptions have been found throughout most of Cyprus and beyond the sea, in coastal Syria and Tiryns, in the Peloponnese (see Figure 1.6). On the island, inscribed objects have been found "in all the most important coastal urban centers", namely Enkomi, Kition, Kalavasos-*Ayios Dhimitrios*, Hala Sultan Tekke, Maa-*Palaekastro*, but also, in smaller numbers, at inland settlements. Outside Cyprus, the number of inscriptions from the Syrian port-town of Ugarit amounts to nine. A tenth inscription (SYRI Psce 001) was reportedly obtained in Latakia, but it may very well have originated in the same site. Tiryns has so far yielded three documents (TIRY Abou 001, and Avas 001 and 002). A considerable number of Cypro-Minoan marks on pottery, ingots and other types of objects have been found in the Aegean and the Levant. They are not considered writing *stricto sensu*, but they are obviously a by-product of the use of the dissemination of the script.[100]

[97] Fischer (2011: 79, 84).
[98] Kanta (2014: 104, 110-111).
[99] Published by Hirschfeld (2012b).
[100] See e.g. Hirschfeld (1999; 2002).

Figure 1.6. Geographical distribution of the collected Cypro-Minoan inscriptions.



The distribution of the inscriptions reveals two major asymmetries. First, of the thirty sites were epigraphical material has been found, four have yielded 176 documents, which is more than two-thirds of the corpus. These are, in descending order: Enkomi (128 inscriptions), Kition (28), Kalavasos-*Ayios Dhimitrios* (11) and Ras Shamra/Ugarit (9). These numbers lead us to the second and sharpest asymmetry. Over half of the 244 inscriptions come from the site of Enkomi, a value which is disproportionate even if compared only to Kition, which ranks number two. In fact, nineteen of the 28 texts from Kition are exceedingly brief inscriptions on pottery, so that even in qualitative terms the material from this site relates poorly with that from Enkomi.

Excluding the unepigraphic examples, the clay balls represent the most numerous class, totalizing 89 of the 244 inscriptions (36.5%), and the vast majority, 83, originate in Enkomi. Ferrara hypothesizes that writing on this medium was a peculiarity of Enkomi and that, from there, it spread to the other sites where it appears (Hala Sultan Tekke, Kition and Tiryns), but shows the necessary caution concerning the idea that writing was moreover a "prerogative" of the settlement and its elite.[101] Not only this appears to be so, but also we should keep in mind that these objects occur in high numbers but the amount of text borne by each specimen is minimal—as is often the case with Cypro-Minoan inscriptions. Thus, if we excluded the clay balls, Enkomi would have 45 inscriptions against the 26 of Kition and the eleven of *Ayios Dhimitrios* and the nine of Ugarit. The material from Enkomi would still represent a considerable portion of the total (45 of 155, or less than one third of the inscriptions), but it would compare less unevenly with Kition. This warns us that the type of inscription, the amount of text and the investment in its production are factors to consider in any discussion of literacy on Bronze Age Cyprus. Kalavasos-*Ayios Dhimitrios*, which may have had a prominent political position in the 14th century BCE (see 1.2.4.2), has yielded more clay cylinders than Enkomi, whereas the recently-found clay tablets from Pyla-*Kokkinokremos*—if they prove to have been locally written—might force us to rethink the apparent hegemony of Enkomi and Ugarit as regards this type of document.

The geographical distribution of the Cypro-Minoan inscriptions, which alone points to a relative predominance of Enkomi in matters of writing, must be contrasted against their chronology in order for us to see the script in a multidimensional perspective.

1.2.4 Chronological distribution

It is not easy to offer an overview of the chronological distribution of the Cypro-Minoan inscriptions, given the variety of circumstances in which they were found and the different degrees to which those circumstances were documented. The chapter of

[101] *CMI I*: 21.

Vandenabeele in *HoChyMin*[102] and *CMI* both provide relative and absolute dates for the inscriptions treated in these works. Such dates provide a useful basis for the analysis in this thesis, but their limitations are of consequence. The main difficulty is that it is impossible to assign all inscriptions to homogenous periods of time and arrive at a coherent picture of their distribution. For example, KALA Mbij 001 is dated specifically to the LC IIA period (1425-1360 BCE) and KITI Mexv 001 is assigned expressly to the LC IIC (1320-1190 BCE), but ENKO Psce 001 broadly associated with the LC IIB-C. Moreover, the dates of Vandenabeele and Ferrara are not always in agreement (see Appendix C). Finally and to complicate matters further, about 50 inscribed objects, i.e. approximately one-fifth of the current corpus, are of unknown chronology.

For this reason, I give a synopsis of the distribution of the inscriptions through the main archaeological periods of the Cypriot Late Bronze and Early Iron ages, mainly focusing on those with more precise datings. For the archaeological contexts of setting inscribed objects containing repeated sequences, see 5.6.2.

1.2.4.1 Late Cypriot I (1600-1425 BCE)

All of the very few inscriptions that have been assigned to this period and whose provenance is known are from Enkomi.

ENKO Psce 003 is an inscribed cylinder seal from Tomb 2 that bears one sequence of four symbols, of which probably only two represent genuine signs of writing (see Appendix A). Opinions on the chronological ascription of the item oscillate between LC I or specifically LC IA (1600-1525 BCE) dates and even a later chronology is possible.[103]

The second inscription that has been assigned to this period is ENKO Apes 001, found in sector Q5E of Enkomi. It consists of two sequences of three signs, separated by a divider, incised before firing on a sub-triangular clay object with a hole on its narrowest edge. The item has been interpreted as a weight (thus "Apes") but Ferrara more plausibly interprets it as a label.[104] Although some authors have agreed on a LC IA date, the archaeological context of the inscription appears to be uncertain and both Vandenabeele and Ferrara prefer to assign it more generally to the LC I (1600-1425 BCE).[105]

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[102] *HoChyMin*: 33-38.

[103] The object was originally published by O. Masson (1957b: 6-7, fig. 1) and is now included in *CMI*. According to the pottery found in the tomb, Gjerstad *et al.* (1934: 474-475) attributed it to the LC I (1600-1425 BCE) and that date was accepted by Porada (O. Masson, 1957b: 8). Citing Gjerstad *et al.*, Ferrara (*CMI* II: 117) dates it specifically to the LC IA (ca. 1600-1525 BCE). Finally, it should be noted that the object was found "in the sieves".

[104] *CMI* I: 53, 56; *CMI* II: 51.

[105] Schaeffer *et al.* (1968: 266-267) and *CMI* I: 53. Schaeffer *et al.* originally dated it to the transition period between MC III and LC I. Later, a sort of consensus was reached for a LC IA date (see CMI I: 53, n. 57 and *CMI* II: 51, with references). Vandenabeele (*HoChyMin*: 34) opts less categorically for LC I, while recognizing "qu'il n'y ait pas de context ni de vrai parallèle". Ferrara too notes that the chronology

The much-debated clay tablet no. 1885, now labelled ENKO Atab 001, was found in the North Area of Enkomi, in Room 103 of the LC I building called the "Fortress". Stratigraphically, the earliest layout of this building corresponds to the floors XI (the earliest) through VI (the latest). At the time of Floor X, Room 103 underwent modifications following a partial destruction, and a facility interpreted as a copper smelting workshop was installed in the room, which was functional down to the time of Floor VII. The tablet was found in the filling between floors IX and VIII.[106] Since it was found in secondary deposition, it can be deduced that it is no later than the filling, which is dated to the LC IB (1525-1425 BCE), but it cannot be asserted that it "belongs to the period of the re-arranged 'Fortress' and the installation of the copper workshop" as Dikaios suggested,[107] because it is impossible to be certain about the precedence of the materials used in the filling. Hence, 1525-1425 BCE is considered the *terminus ante quem* for ENKO Atab 001, but it is also taken as the date before which no Cypro-Minoan inscription can be placed with safety (because the date of ENKO Apes 001, 1600-1425 BCE, is more uncertain).

The notion that writing was exclusive to Enkomi during this early phase is based on extremely limited evidence and, given the little archaeological work done on contemporary levels at other sites, must be mitigated. In any case, in literacy as in other aspects, the settlement must have occupied a prominent position. Knapp cautions that for the period of 1650-1450 BCE "we cannot state unequivocally that Enkomi was the primary town center" of Cyprus, but maintains that it was "instrumental in developing foreign trade" and "played a key—even if not exclusive—role in the intensified mining, transport, refining, and export of Cypriot copper."[108]

1.2.4.2 Late Cypriot IIA-IIB (1425-1320 BCE)

Only the site of Kalavasos-*Ayios Dhimitrios* has yielded inscriptions dated securely to the LC IIA period, namely two signet rings: KALA MBij 001 and 002. They were both found in Tomb 11 and contain the same text, consisting of a single sign-sequence. The burial is reported to have been used in the LC IIA2 (1390-1360 BCE)[109] and seems to be contemporary with architectural elements that are stratigraphically earlier than Building X, a structure with significant epigraphic findings from the LC IIC (see below).[110]

In the LC IIB (1360-1320 BCE), instances of writing appear in more inland areas. From Katydhata come two inscribed jugs of local production (KATY Avas 001

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of the object cannot be confirmed on the basis of the published contextual data, "for the circumstances of its recovery are, at best, extremely vague".

[106] Dikaios (1963: 45, fig. 4).

[107] *Ibid*.

[108] Knapp (2008: 149, 151).

[109] *CMI* I: 66-67.

[110] South (1997) apud Knapp (2008: 149).

and 003), both bearing a single sign-group.[111] At Toumba tou Skourou, three *pithos* sherds (TOUM Avas 001a-b-c) bear three different but badly damaged inscriptions. Of less secure date are two cylinder seals from the necropolis of Ayia Paraskevi (PARA Psce 001 and 002). For PARA Psce 001, O. Masson hypothesized a 13th century BCE date.[112] Vandenabeele and Olivier adopt the same chronology, but, although they only cite the latter scholar, they offer a more precise dating in the LC IIC (1325-1225 BCE).[113] Finally, Ferrara ascribes the seal to the LC IIB but does not indicate the motive either. The cylinder is reported to come from a funerary context but details of its recovery are unknown.[114] We must assume the date is proposed on stylistic reasons. Ferrara adds a second cylinder seal from a funerary context at Ayia Paraskevi to the corpus (PARA Psce 002) and assigns it also a LC IIB date, though hesitantly.[115]

No further inscriptions can be assigned expressly to the LC IIA or LC IIB periods, at least not with certainty. The situation of Enkomi, the sole possessor of writing in the LC I, seems obscure during this period. The inscribed hematite cylinder seal KOUR Psce 001, allegedly found at Kourion in the late 19th century, was dated stylistically to the 14th century BCE (i.e. roughly the LC IIA through the early LC IIC) by Porada.[116] Ferrara offers the more specific date of LC IIB. The cylinder is inscribed with a single sign-sequence that repeats in the clay cylinder from Enkomi (ENKO Arou 001). The latter was dated to the 14th century BCE (LC II) by its excavators and could be roughly coetaneous with KOUR Psce 001,[117] but its archaeological context is not well documented (see 5.6.2.1). The fact that the two objects share a sign-group makes it tempting to see them as contemporary, but this needs not be the case. Caution is advised.

1.2.4.3 Late Cypriot IIC-IIIA (1320-1100 BCE)

> *If Enkomi thus became a regional force, and quite likely the political or at least the economic centre of Cyprus during the 16th-15th centuries BC, by the 14th-13th centuries BC, the material culture from several different sites increasingly parallels that found at Enkomi, and becomes much more homogeneous islandwide.*
>
> A. B. Knapp[118]

[111] *HoChyMin*: 47-48, 194, 196; *CMI* II: 65-67.
[112] O. Masson (1957b: 15-16)
[113] *HoChyMin*: 37, 54.
[114] *CMI* I: 45, 70; *CMI* II: 104.
[115] *CMI* II: 113.
[116] O. Masson (1957b: 10).
[117] Schaeffer et al. (1968: 266-269).
[118] Knapp (2008: 339).

It is to this period, covering approximately two centuries, that the largest portion of datable inscriptions can be assigned: around one hundred (see Appendix C). It is only appropriate that Ferrara considers LC IIIA the "*floruit*" of Cypro-Minoan,[119] even if the proliferation of epigraphical material from this period is partly caused by biases of excavation.

The Building X at Kalavasos-*Ayios Dhimitrios* yielded altogether nine inscriptions from the LC IIC period (1320-1190 BCE): five small clay cylinders (KALA Arou 001-005), two inscribed pottery handles (KALA Avas 001 and 002), and two gypsum(?) plaques, possibly storage jar lids (KALA Ppla 001 and 002). At least part of part of these documents seems to have had an administrative function, which has also been adduced for the building where they appeared.[120]

Five inscriptions from Kition are attributed to the end of the LC IIC: KITI Avas 002, a pottery jug from a tomb dated to ca. 1200-1175 BCE; KITI Avas 003, 004 and 005, three inscribed pottery vessels from looted Tombs 4 + 5, which have been dated to ca. 1225; and KITI Avas 013, a pottery jug handle from Temple 5, particularly from a context dated to the transition between the LC IIC and the LC IIIA.[121]

Four inscribed objects from the "Ashlar Building" at Maroni-*Vournes* date to the LC IIC: a sherd of pithoid jar (MARO Avas 001), a krater rim (MARO Avas 002), a basin rim (MARO Avas 003) and a handle (MARO Avas 004).[122]

Two inscriptions assigned to the LC IIC period derive from the area of Pyla, one of them dated more safely than the other. This is PYLA Mins 001, a bronze axe incised with a two-sign sequence that was found on the floor of one of the houses of Pyla-*Kokkinokremos* and which has been dated to the third quarter of the 13th century BCE.[123] While PYLA Mins 001 derives from controlled archaeological excavations, the inscribed cylinder seal PYLA Psce 001 is the product of the furtive digging of a tomb at the village of Verghi.[124] Its 13th-century BCE date was proposed on stylistic grounds by Porada, so the assignation of this piece to the LC IIC period is open to discussion.

It is therefore in the LC IIC period that Cypro-Minoan is for the first time attested in a multiplicity of settlements throughout the island, and generally in larger numbers. Of course, it must be remembered again that levels of earlier periods at settlements other than Enkomi have not been as much excavated. It is also during this phase, namely in the latter half of the 13th century BCE, that Cypro-Minoan documents

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[119] *CMI* I: 90f.
[120] *CMI* I: 33, 146, 205, n. 226, with references. See also 5.6.2.1 here.
[121] *HoChyMin*: 48-49 and *CMI* II: 67-69, 72. Although KITI Avas 003 comes from the same context as KITI Avas 004 and 005, and Vandenabeele (*HoChyMin*: 48) assigns it the same absolute date (ca. 1225), she associates the inscription with the LC IIIA instead of the LC IIC (end), in what is certainly just a *lapsus calami*. Ferrara (*CMI* II: 68) confirms that the object dates to the LC IIIA.
[122] Cadogan *et al*. (2009), apud Ferrara (2012a: 82)
[123] *HoChyMin*: 51, n. 173, citing Karageorghis and Demas (1984: 36, 58, 76, 78). Cf. also V. Karageorghis (1983b: 927-928).
[124] O. Masson (1957b: 12-13).

are attested outside the island, at Ugarit (at least nine), their chronological *terminus* coinciding with the destruction of the Syrian town in the early 12th century BCE.

Ferrara stresses that, in this period, the amount of inscriptions from Kalavasos-*Ayios Dhimitrios* is higher than that of Enkomi.[125] But this is the consequence of her assigning most of the LC IIC material from Enkomi to the later phase of the period, namely at the transition to LC IIIA.[126] Therefore, whereas Kalavasos-*Ayios Dhimitrios* yielded nine inscriptions dated to the LC IIC, Enkomi furnished sixteen inscriptions that have been assigned to the transitional phase LC IIC-IIIA and ten dated to the LC IIIA.[127] Ferrara has also shown that clay balls seemingly written by the same "hands" were sometimes retrieved from levels of both periods.[128]

This state of things must also be seen in the light of the destruction and abandonment of Kalavasos-*Ayios Dhimitrios* at the end of the LC IIC (ca. 1200 BCE) versus the continuity in the occupation of Enkomi in the LC IIIA.[129]

Of relevance for accounting for the visibility of writing at Kalavasos-*Ayios Dhimitrios* during the LC II is the proposal by Goren et al. that this site and Alasa-*Paleotaverna* are the best candidates for capital of the kingdom of Alasiya in the 14th through the 13th centuries BCE. Their theory is based on the proximity of these sites to the sources of the clays used in the Alasiyan letters found at Tell el-Amarna and Ugarit, as revealed by petrographic analyses, as well as their strategic establishment, simultaneously close to the copper sources of the Troodos range and the coast.[130] The size of the settlement at *Paleotaverna* is slightly bigger than that of *Ayios Dhimitrios*,[131] but the latter stands out because of the unevenness of evidence for the use of formal writing between the two sites. So far, *Ayios Dhimitrios* yielded eleven LC II inscriptions of some length, some likely of administrative nature, while *Paleotaverna* presented archaeologists with just one inscribed pottery handle (ALAS Avas 001). The question remains open, but should be kept in mind in future investigations.

Apart from KITI Avas 013, which is considered of transitional late LC IIC-LC IIIA date, Kition yielded at least sixteen inscriptions dated to the LC IIIA. These include inscribed handles (KITI Avas 001, KITI Avas 006 through 012, and 016)[132] as well as inscriptions on three ivory objects (a pipe, a rod and an Egyptian-style Bes plaque), on one bronze object interpreted as a "votive kidney" and on two clay balls.[133]

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[125] *CMI* I: 81.
[126] *Ibid*.: 75.
[127] *Ibid*.: 75, Chart 2.4.
[128] Compare charts 2.4 (p. 75) and 4.6 (p. 181) in *CMI* I.
[129] Knapp (2008: 247).
[130] Goren et al. (2003); see also the discussion in Knapp (2008: 302-303). The same study is also the reason that today the equation of Alasiya with Cyprus is broadly accepted.
[131] Knapp (2008: 140, fig. 24).
[132] *HoChyMin*: 48-49; *CMI* II: 67-69, 72.
[133] Cf. *HoChyMin*, CMI II and Appendix C here.

One of the two clay balls from Hala Sultan Tekke, HALA Abou 002, comes from a LC IIIA context.[134] The Kition and Hala Sultan Tekke balls must, of course, be related in some fashion to their far more numerous homologues at Enkomi.

Maa-*Paleokastro* has yielded four inscribed pottery handles dated by the excavators to the LC IIIA.[135]

As a general remark, the evidence from Enkomi and Kition is in line with the views of those archaeologists who sustain a good deal of continuity in the transition from the LC IIC to the LC IIIA period.[136] Enkomi, Kition and Palaepaphos survived the destructions and abandonments that characterized the end of the Bronze Age, and, according to Knapp, they may have become regional centers.[137]

1.2.4.4 Late Cypriot IIIB (1100-1050 BCE)

Inscriptions dating to this period include a number from the "Sanctuary of the Ingot God" at Enkomi, namely the inscribed *pithos* rim ENKO Avas 004 and five clay balls (ENKO Abou 061, 062, 065, 066 and 069).[138] It is noteworthy that some of the balls contain sign-sequences repeated in documents dated to the LC IIIA. In addition, two other balls (ENKO Abou 055 and 057) were apparently found in close association with the building, but neither their context nor their dating is clear due to the imprecision of the published excavation records.[139] Ferrara also dates clay balls ENKO Abou 039, 040 and 044-048, of which we know only the topographic point ("Sanctuary zone 103"), to the LC IIIB.[140] She assigns 27 balls to the "LC IIIA/B", which is more than any other period, but duly signals that because of problems related to contextual chronology "we cannot claim (…) that the activity of inscribing *boules* intensifies in the LCIIIB period".[141] ENKO Apla 001 is also dated to the LC IIIB.[142]

One of the inscribed pottery handles from Kition, KITI Avas 014, was found in a context allegedly dated to the LC IIIB (Floor II in Room 12 of Temple 5). It is noteworthy that the inscription consists of the typical 1+1 sign formula, which makes it typologically identical with the remaining inscribed handles from the building, all dated to the late LC IIC or LC IIIA. Curiously, the two signs it presents coincide with the inscription of KITI Avas 008, which is of earlier date (LC IIIA), as well as with KITI Avas 018, reportedly dating to ca. 1075/50-1000 BCE (i.e. the end of LC IIIB/CG I) (see the following section). This casts some doubt on the late dating of KITI Avas 018,

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[134] *HoChyMin*: 43, n. 89, citing Öbrink (1979: 46-48).
[135] *HoChyMin*: 50, nn. 153-156, with reference to Karageorghis and Demas (1988: 106, 110, 162, 199, 258 and 260). For unclear reasons, Ferrara counts only two in *CMI* I: Chart 2.4.
[136] See section 3.3.2.1 in this thesis.
[137] Knapp (2008: 247).
[138] *CMI* I: 102-104.
[139] *CMI* I: 102.
[140] *CMI* I: 186, tab. 4.7.
[141] *CMI* I: 181.
[142] Caubet and Courtois (1986: 73-74), apud *HoChyMin*: 45, n. 96.

which might well have been closer in time to the other analogous inscriptions, all dated to the 12th century BCE. A pottery handle from the site of *Bamboula*, at Kition (KITI Avas 019), has been assigned to the LC IIIC by Vandenabeele and Ferrara,[143] a chronological phase which for some authors refers to first half of the 11th century BCE.

1.2.4.5 Cypro-Geometric I (1050-950 BCE)

An inscribed handle (KITI Avas 018) was found on Floor I of Courtyard A in Temple 5, at Kition. This floor was interpreted as being part of a rebuilding of the temple according to the same layout of the occupation of Floor II and was dated by the excavator to ca. 1075/50-1000 BCE.[144] However, as mentioned above, the inscription on the handle is identical with those of two other handles, KITI Avas 008 (LC IIIA) and KITI Avas 014 (LC IIIB), casting reasonable doubt the 11th century BCE date assigned to it.

The Early Iron Age necropolis of Palaepaphos-*Skales* yielded eight inscriptions, of which six have been dated to the CG period. The most famous of them is certainly the spit or *obelos* of Opheltas. There is broad agreement that this is the first Cypriot inscription in Greek language. Its five signs are effortlessly read as *o-pe-le-ta-u* = /Op^{h}eltāu/ 'of or belonging to Opheltas'. One personal name is by itself of little linguistic value, but we have already the presence of the Greek Cypriot genitive case-ending *-āu* (from an earlier form **-āo* which Mycenaean preserved), only shared with the Arcadian dialect, as evidence that the inscription already employs a dialect of Arcado-Cypriot stock.[145] Much less consensual than the language is the classification of the script. Some scholars see it as the first Cypro-Greek inscription, while others take it to be one of the latest Cypro-Minoan texts—particularly Olivier, who includes it in *HoChyMin* as PPAP Mins 001. In 3.3.2.2, I argue that, for structural and paleographical reasons, the script of the spit must be Cypro-Greek. The Opheltas' inscription was found in Tomb 49 (T49), which yielded two other inscribed spits, PPAP Mins 002 and 003, as well as a stone block (PPAP Pblo 1) that was retrieved from the tomb's dromos and bore a two-sign Cypro-Greek inscription *a* | *nu*. It seems therefore likely that all of the syllabic inscriptions in the tomb are already examples of the Cypriot-Greek syllabary (see 3.3.2.2).

PPAP Pblo 002 comes from a different tomb (T67), but is also dated to the CG I.[146] Vandenabeele assigns the same chronology to PPAP Mvas 001, a silver bowl inscribed with a five-sign sequence. The presence of sign CM 88, in a form that is unknown in Cypro-Greek, in principle assures the Cypro-Minoan character of the

[143] *HoChyMin*: 49; *CMI* II: 75.
[144] *HoChyMin*: 49, n. 147; *CMI* II: 74-75; see also V. Karageorghis (1976a: 241).
[145] É. and O. Masson (1983: 414).
[146] V. Karageorghis (1983a: 177).

inscription.[147] Unfortunately, the vessel was found on surface and, even if it originally belonged in a CG I context, the possibility that it was an heirloom cannot be precluded. Lastly, it should be mentioned that an inscribed cylinder seal, PPAP Psce 001, was found in T71, a tomb whose assemblage has been dated to the CG III (850-750 BCE).[148] However, the excavator is justified in interpreting it as an heirloom, since the object is of a type whose production and use declined from the twelfth century onwards.[149]

In conclusion, it is in the CG I that Cypro-Greek makes its appearance in the archaeological record. Certainly, it coexisted with Cypro-Minoan for a while. Unfortunately, because of the lack of epigraphic evidence for the period between the 11th and the 8th centuries BCE that "transitional" stage remains rather obscure (see 3.3.2).

1.2.5 Typology of the inscribed objects

Interpreting the meaning of an inscription often depends on understanding the function of the object on which it was made. Unlike other contemporary scripts, with Cypro-Minoan the clay tablets do not represent the most numerous group amongst the 244 documents considered here. The same is true of the cylinders, the other group of clay documents bearing relatively long texts. The most visible groups of inscribed objects are the clay balls (89) and ceramic vessels (74), followed in the distance by the cylinder seals (20). All of these contain very short strings of text. The clay tablets come only after the seals: they are nine, excluding the two unpublished items from Pyla-*Kokkinokremos*. This distribution may in part owe to accidents of preservation, but it for the most it must reflect the use of Cypro-Minoan in a multiplicity of spheres. This has implications for virtually all aspects of the study of the script but, as we will see, it will be of particular importance for the analysis in Chapter 5.

[147] É. and O. Masson (1983: 411-412, fig. 1); *HoChyMin*: 52, n. 186.
[148] V. Karageorghis (1983a: 186, 189, Pl. CXX); see also Porada (1983: 409).
[149] Webb and Weingarten (2012: 87).

Chapter 2

ESTABLISHING THE SIGNARY

> *Nothing could at first be more bewildering than the immense number of signs.*
>
> J. A. Booth[150]

2.1 HOW MANY SCRIPTS? HOW MANY SIGNS?

Establishing the signary of a writing system means distinguishing between signs proper (*graphemes*) and formal variants of the same sign (*allographs*).[151] For example, for the user of any Latin-based alphabet, this involves recognizing that C and G are graphemes, while G and *g* are allographs of the same grapheme. No script can be read without this basic distinction and this is why it is a necessary step for investigating an undeciphered writing system. Naturally, if the script is unreadable the task is difficult to achieve in full, but most decipherments were not accomplished until this was done to some extent. The story of how Linear B was deciphered well illustrates this point, since Ventris could only make his breakthrough after Bennett Jr. and Kober had established the script's signary.[152] Here this enterprise must also come first. Otherwise, any investigation into the sound values of Cypro-Minoan would be rendered unfruitful. Subsequent stages in the present investigation involve statistical analyses of Cypro-Minoan signs (see mainly Chapter 4), so that any incorrectly individualized graphemes will reflect negatively on the results.[153] It goes without saying that even after decipherment there can remain doubts about the identity of some signs. Linear B, with several rare signs still defying identification, is again a case in point.[154] But it is our responsibility to minimize the unknowns to the possible extent.

As has been made clear in Chapter 1, the field already counts with more than one published sign-list. So why dedicate a chapter to the signary of Cypro-Minoan? Despite the fact that the repertory in *HoChyMin*, a revised version of É. Masson's, is becoming the main reference in the field, neither it or any of the existing inventories of signs has become fully accepted as an accurate representation of signary (or signaries) of Cypro-Minoan. The reason is that, as pointed out by Davis, "a truly definitive sign-

[150] Booth (1902: 343), on the initial steps in the decipherment of the Mesopotamian cuneiform script.
[151] I use the terms *grapheme* and *allograph* following the nomenclature established by Sampson (1985: 25).
[152] Chadwick (1970: 39); Palaima (2011: 54).
[153] See Palaima (2011: 54), specifically on Linear B.
[154] Melena (2000, with refs.) lists as untransliterated Linear B syllabograms *18, *19, *22, *34, *47, *49, *56, *63, *64, *65, *66, *79, *82, *83, and *86.

list can be produced only through a paleographic study of the entire corpus".[155] This sort of study was conducted by Olivier and Godart, as a necessary complement to their five-volume corpus of Linear A: *Récueil des inscriptions en Linéaire A* (1976-1985), abbreviated to *GORILA*. In the latter, the editions of the documents were accompanied by charts that subsumed the main variants of each sign *as they appear on the inscriptions* alongside tables with *normalized* signs for a more immediate reference; in addition, the fifth volume of *GORILA* was supplemented with a set of microfiches comprising tables with the *full* range of variants of each sign. Differently, Olivier complemented the editions of the Cypro-Minoan inscriptions in *HoChyMin* with only by a general table of *normalized* CM 1-3 syllabograms (Figure 1.4) plus individual tables of each of the three subsets containing one, two, or three variants of each sign in its actual form, but no more.[156] Thus, neither Olivier's nor any of the other three repertories of Cypro-Minoan signs published so far has been founded on, and published in the company of, a thorough mapping of all paleographical variants of all signs, considering factors such as the writing media, inscribing technique, chronology and geography. The aim of this chapter is to overcome this lacuna as much as possible.

Before we begin with that task, however, we need to determine how much work still needs to be done. In other words, we must determine what the shortcomings of the present signary are and how it might be improved. Such an inquiry cannot evade the question whether the inscriptions represent one or multiple scripts. At present, Cypro-Minoan stands divided in three subsystems, CM 1, 2 and 3, according to the Masson-Olivier scheme. As we have seen, Palaima's first in-depth critique of the traditional classification was followed by a period of some dormancy in the Cypro-Minoan studies, but, recently, criticisms of the criteria that sustained the subdivision have been issued by some authors, particularly Davis and Ferrara.[157]

These criticisms are far from unfounded. Although CM 2 comprises only four clay tablets or tablet fragments from a single site (Enkomi), which would make it quite narrow in function and sphere of use if it were a writing system on its own right, É. Masson maintains that it is distinct from CM 1. In her own words:

> "La différence entre le CM 1 et le CM 2 se manifeste déjà dans le ductus de leur écriture : alors que les caractères du premier ont un aspect très linéaire, avec un mouvement souple et pourvu d'une certaine élégance, les graphies du deuxième paraissent être plus carrées et même trapues."[158]

Palaima and Ferrara have argued convincingly that these differences have much to do epigraphical factors. The signs of the Enkomi tablets that make up CM 2 are very

[155] B. Davis (2011: 70).
[156] See *HoChyMin*: 413-416.
[157] See B. Davis (2011), *CMI* I and Ferrara 2013.
[158] É. Masson (1974: 15).

small (between ≈0.25 and ≈0.5 cm)[159] and drawn with jabbed strokes, probably with a blunter stylus. With less space to write and a less sharp writing instrument, they could not have the curves of signs incised into clay with thinner styli and in larger sizes, as e.g. the characters of clay balls (between ≈0.4 and ≈1.8 cm).[160] This is the cause of the more schematic and angular design of the CM 2 signs, and is what accounts for the peculiarity of some the shapes. At the same time, it has often been overlooked that some stylistic features of CM 2 are not exclusive to it. For example, two clay tablets from Ugarit, RASH Atab 001 and 004, share the angularity of some characters, e.g. CM 70, 87 and 92, with their CM 2 counterparts (see Table 2.1). Likewise, the variants of CM 27 used in RASH Atab 004 () and CM 2 () are identical but diverge substantially from that of other clay documents, including the Enkomi cylinder () and the clay balls ( ,). This suggests that the scribal traditions that saw the production of the clay tablets of Enkomi and Ugarit had common roots and clashes with É. Masson's theory that CM 2 and 3 are separate scripts derived *independently* from CM 1. As Palaima observes, the preference for smaller signs in the production of larger texts (not just the tablets, but also the clay cylinders) is unsurprising for reasons of economy as they save space and time,[161] and helps to understand why É. Masson did not find her unique CM 2 on anything other than clay tablets. And if the signs of CM 2 are more schematic and "squarish", it is possible that the sixteen or more of them that are thought to be unattested in the other subsets (see below) actually correspond to simplified or angularized versions of CM 1 and 3 signs. Put differently, if some well-established signs are noticeably simplified in CM 2, is it safe to preclude more drastic paleographical changes in characters not so well-known?

The case of CM 3 is paradoxical. In É. Masson's original categorization it denoted a script limited to four inscriptions from coastal Syria (RASH Atab 001 and 004, RASH Mvas 001, and SYRI Psce 001) and created locally with new signs for sounds foreign to the language of CM 1 (in her view, the main Bronze Age syllabary of Cyprus). Supposedly, the script of these four documents was different from that of the other Cypro-Minoan inscriptions found in Syria (RASH Atab 002 and 003), which she interpreted as CM 1 texts imported from Cyprus.[162] Conversely, Olivier has redefined CM 3 as the writing found on all inscribed objects from Syrian territory, but then recognizes it cannot represent a script proper,[163] something which is only a consequence of his own criterion. In other words, CM 3 as it stands today is an artificial construct. If there was ever a distinct Cypro-Minoan syllabary at Ugarit, this needs yet to be demonstrated with sound arguments. Even Olivier seems to agree: "It would be more

[159] The measures are according to *HoChyMin*.
[160] Palaima (1989a: 155-156); *CMI* I: 202.
[161] Palaima (1989a: 156.
[162] É. Masson (1974: 12, 19-36 and figs. 2-4, third column).
[163] *HoChyMin*: 21. According to Olivier (2013: 11), he follows Hiller (1985: 72-73) in using this geographical criterion.

correct to follow E. Masson and try to distinguish between CM 1 and CM 3 on the Syrian coast, but at the moment this turns out to be almost impossible".[164]

The criteria for declaring CM 1 a separate script are also questionable. This subcorpus amalgamates the 231 inscriptions that are not part of CM 2 or 3, making for a very large and heterogeneous group. By definition, not only CM 1 concentrates inscriptions that have very little in common in epigraphical terms, but allegedly it uses a number of syllabograms higher than that of the other subcorpora: 72, against the 61 of CM 2 and the 50 of CM 3 (see below). Appropriately, Steele deems CM 1 a "catch-all" term for any Cypro-Minoan inscription from Cyprus or of doubtful provenance that does not meet É. Masson's criteria for entering the other two purported scripts, CM 2 and 3.

Despite these incongruences, Olivier, Duhoux and Egetmeyer maintain their defense of the CM 1-3 in recent works. The argumentation follows the original reasoning of É. Masson closely: in each of the three subsets, peculiar sign forms that are unattested in the other two are interpreted as innovations that set each of those subdivisions apart from the others, as a separate writing system. For example, in Masson's opinion the signs of CM 2 that had no obvious formal counterparts in her other subscripts are additions to the original CM 1 syllabary, "pour les besoins de la langue que le CM 2 servait à noter."[165] We may refer to the recent argument of Olivier:

> "Palaima's critique, according to which all three groups feature the *same* writing, should be rejected. (…) CM 2 (sixty-one signs) includes seventeen signs that are new as compared with the forty-three signs that it shares with CM 1 (seventy-two signs). In other words, 39 per cent of its signs are new. (…) As for CM 3 (fifty signs), the signs that are to be found neither in CM 1 nor in CM 2 likewise might indicate a quite separate script."[166]

Notwithstanding his disagreeement, Olivier has not addressed the epigraphical arguments and concerns of Palaima and against them he sets up only the quantification of peculiar sign shapes. The most superficial assessment of these quantifications shows inconsistencies. Seventeen out of 61 CM 2 signs represent 28, not 39%, of new graphemes. In a previous publication, the author provides a different count: CM 2 would have 42 syllabograms in common with CM 1 and eighteen innovations.[167] Oddly, in both calculations (43 + 17 and 42 + 18) the total number of signs implicated is 60, not the 61 that Olivier attributes to CM 2 in *HoChyMin*. Duhoux follows the same line of argument as Olivier, but also provides different statistics: in his view, CM 1 and 2 share

[164] Olivier (2013: 11)
[165] É. Masson (1974: 15-16).
[166] Olivier (2013: 11).
[167] Olivier (2008: 607).

45 syllabograms, whence CM 2 would have sixteen new signs.[168] These incongruences may seem minor, but they already show that the arguments drawn in defense of the CM 1-2-3 division rely on subjective views of how many sign forms are shared and not shared by the hypothesized Cypro-Minoan subscripts.

At the same, underlying the criterion of quantifying purportedly innovative signs vs. the preservation of a common matrix in each subsystem is the theory that CM 2 and 3, as scripts derived from CM 1, introduced new signs to represent the sounds of the new languages they represented. Recently, Olivier claims that CM 3 "may been used for several of the other languages spoken in Ugarit in the thirteenth century (not only the language noted by CM1, but Ugaritic, Babylonian, Hurrian, Hittite, Egyptian, etc.)".[169] According to him, the total number of signs used by the alleged Cypro-Minoan subscripts is 96. Of these, CM 1 (supposedly the original Cypriot script) is said to use 72 signs; CM 2 incorporates 61, of which seventeen or eighteen are innovations; finally, CM 3 employs 50, of which six are innovations. Now, if CM 3 was derived from CM 1 but only retains 44 of its signs, does this mean that besides adding six new signs, supposedly for the needs of a different language, the creators of this subscript deliberately discarded 28 signs of CM 1? Likewise, did the inventers of CM 2 give up 27 or 28 syllabograms of CM 1 while at the same time creating seventeen or eighteen new ones? As Ferrara observes, such variations would need to be accounted for,[170] but with inscriptions that remain undeciphered it seems a risky procedure to use *assumptions* on language-specific re-estructurations as *arguments* for isolating different subsystems as more than mere working hypotheses.

Beyond the issues just discussed, the root-problem with quantifying common and innovative signs in the Cypro-Minoan inscriptions is that it has been taken for granted the 96 signs in *HoChyMin* are correctly and *definitively* individualized, and each and every one represents a grapheme, never an allograph. It can be cogently demonstrated, however, that the Olivier's criteria for isolating some signs—whether maintained from É. Masson's list or redefined by him—are arbitrary. One such case is that of signs CM 46 and 47. Olivier follows É. Masson in listing them not just as separate graphemes but also as diagnostic of different scripts: CM 46 would be peculiar to CM 1 and CM 47 an innovation of CM 2. However, two examples of CM 46, one from ENKO Arou 001 () and the other from ENKO Abou 036 (), are not too different from CM 47 (). What is alarming is that, although no other criterion, but paleographical resemblance seems to be used, Olivier assumes that forms this similar represent distinct signs while consenting a surprisingly high degree of variation for CM 46 within CM 1: cf.  ,  ,  ,  and  , among other variants (for which see 2.3.10). The contradiction that ensues has only been underscored by the recent publication of an

[168] Duhoux (2013: 32).
[169] Olivier (2013: 11). However, not all of these languages had the same status at Ugarit: for example, Hittite and Egyptian were almost certainly not spoken there (see 5.4.1).
[170] *CMI* I: 219.

inscription from Maroni-*Vournes* (MARO Avas 003): if we tried to classify it in accordance to the traditional scheme, it would have to belong to CM 1, yet one of its signs () is formally identical with CM 47, which is supposedly peculiar to CM 2.[171] Egetmeyer rejects as improbable the identification of the *Vournes* sign with CM 47, because the latter is "exclusif du CM 2 d'Enkomi" and defends that it should rather be considered an instance of CM 46 "dans une inscription en CM1".[172] This shows how circular the argumentation in favor of the traditional division of scripts and signs has become: CM 2 is a separate system because it contains new and different signs such as CM 47, but CM 47 is considered different from CM 46 not for paleographical reasons, but because it is peculiar to CM 2. This case is far from standing alone. Other pairs of signs that have been listed as representative of distinct subscripts, but have variants that look identical, include: CM 34 () and 56 (); CM 39 () and 49 (); and CM 50 (,) and 51 (,). The example shown in Table 2.1 also emphasizes the lack of a criterion for separating or assimilating certain forms. Olivier consents a significant range of variation with signs CM 70, 87 and 92, including ductus that look more triangular in various objects inscribed with the alleged CM 1 syllabary, but reappear with a more angular configuration in clay tablets from Enkomi (CM 2) and Ugarit (CM 3). For some reason, signs CM 88, 89 and 90 are kept apart not as two, but as three separate signs, although they follow the same paleographical pattern and, by the same token, should be treated as one grapheme as well.

Table 2.1: Forms CM 70, 87, 88, 89/90 and 92 in different subcorpora.

Form	CM 1	ENKO Atab 002-004	RASH Atab 004
70			
87			
88		—	—
89/90	—		—
92			

The suspicion that the existing sign-lists do not portray faithfully the signary or signaries of the Cypro-Minoan inscriptions is not just based on manifest inconsistencies. Since the first repertories in 1970s, the publication of each new repertory has entailed a reduction of the number of syllabograms list, from the 114 of É. Masson, through the 96 of Olivier, to the 74 of Ferrara. Regardless of whether some of the modifications introduced were inaccurate, what underlies is the progressive assimilation of graphic

[171] Cadogan et al. (2009: 159-160).
[172] Egetmeyer (2013c: 146).

variants under the same sign and number. This tendency can hardly be justified in full by the publication of new inscriptions, as the lengthiest texts were already known in the 1970s, and even if this were the motivation, it would only stress the hastiness of certain sign individualizations and the likelihood that new finds might change the picture further. We may therefore ask whether some signs that stand separated are not themselves variants of other signs, and whether the signary needs additional assimilations. We have seen that CM 1 is simultaneously the subset with most signs and the most disparate subcorpus (in terms of size, distribution, chronology, epigraphical media, genre, etc.). It is among the signs deemed peculiar to CM 1 that we find the highest number of rare and hapax forms (CM 12b, 26, 63, 83, 84, 108, 109 and 114). We can account for their low frequency and limited distribution in two ways: either they are signs on their own right that are exclusive to one variety of Cypro-Minoan but occur very rarely (which is the traditional view), or they represent paleographical variants of other signs (already listed), used only in specific contexts (i.e. media, places or periods). The first hypothesis is problematic in that it presupposes that different signs mean different scripts, yet well-known cases of ancient scripts, such as the Carian or Greek epichoric alphabets, or even the Cypro-Greek syllabary (with its "Paphian" and "Common" varieties) illustrate well the use of idiosyncratic characters in regional versions of the same writing system. The second hypothesis, on the other hand, is not very controversial, and its implication would be that the 72 signs of Olivier represent an overestimation of the actual number of graphemes employed in CM 1.

Thus, as Palaima and Davis diagnosed, the current sign-list is unreliable because it is not sustained on paleographical evidence, as is evident in the cases discussed above. And while the question whether Cypro-Minoan represents one or multiple scripts must be considered unresolved, it is demonstrated that the division upheld by É. Masson and Olivier is based on hazardous criteria and should no longer be considered the starting point to investigate the inscriptions. We need a "neutral" signary that is not structured upon the traditional division and solves the inconsistencies of the latter.

2.2 QUESTIONS OF METHODOLOGY

2.2.1 The approach by homogeneous subcorpora

But how can we investigate the number of signs employed by a heterogeneous body of inscriptions when the number of associated writing systems is unknown?

A case in point is Carian, a group of 1st millennium BCE inscriptions from regions as distant as southwestern Anatolia and Egypt. For a long time, they were thought to employ as many as 47 signs of a semi-syllabic script, but no attempt at decipherment met acceptance. The research on the Carian script began in the late 19th century, but it remained impenetrable for more than century because the signary was

approached as a whole. This prevented a consensus on whether forms slightly different were signs in their own right or merely graphic variants.[173] The situation changed only in the 1980s, when the Carian corpus from Saqqarah (Egypt) was studied in isolation. The Saqqaran texts employed a "very unitary and standardized" script, much like CM 2, so when the results of said study were tested on the other varieties of Carian, progress was made and decipherment achieved.[174] Eventually, it became clear that the script was an alphabet with several local varieties, not a semi-syllabary, and that the existence of graphic variants for many signs across each alphabetical variety accounted for the seemingly high number of signs. The deciphered Carian, as it stands today, reflects a script with no more than 34 individual letters, and no more than 31 are ever found together in the same epichoric variety of the alphabet.[175]

The necessary changes being made, a similar line of work can be proposed for Cypro-Minoan. The CM 2 subcorpus gathers some of the fundamental characteristics that made the Carian inscriptions from Saqqara a crucial starting point, and more. The subcorpus comprises four clay tablets, ENKO Atab 002a, 002b, 003 and 004, from a single site, Enkomi. They have astonishing similarities in terms of style and technique of writing, shape and layout. It is undeniable that they proceed from the same scribal tradition and that the homogeneous script they employ represents a single writing system. Equally important is the amount of preserved text they offer. Olivier estimates that the four tablets contain altogether around 2,000 signs, of which between ca. 1,300 and 1,500 can be read with security.[176] The text on the side A of tablet ENKO Atab 003 alone embodies a sample of 284 signs (personal count). With a sample of this size, the number of individual signs the four tablets attest to—61 as per Olivier but probably slightly less, as we will see—is likely close to the actual number of signs contained in the script they utilize. We can only second Steele's opinion that the CM 2 texts provide "the most stable and reliable information about any part of the Cypro-Minoan corpus, and to some extent we can judge other inscriptions by comparison with them".[177]

[173] For a full account of the history of the decipherment of Carian see Adiego 2007 (162-204).
[174] Adiego (2007: 192).
[175] Adiego (2007: 230).
[176] There are different counts: Palaima (1989a: 157) estimates "some 1310 signs", Olivier (2013: 11, 13-14) estimates c. 1,500, and Duhoux (2013: 31) calculates 1,369. Evidently, the reason which the exact number varies is because each scholar has his own understanding of the degree of security with each individual sign has been identified.
[177] Steele (2013: 31).

Figure 2.1: The two tablet fragments joined as ENKO Atab 002a+b (courtesy of S. Ferrara).[178]

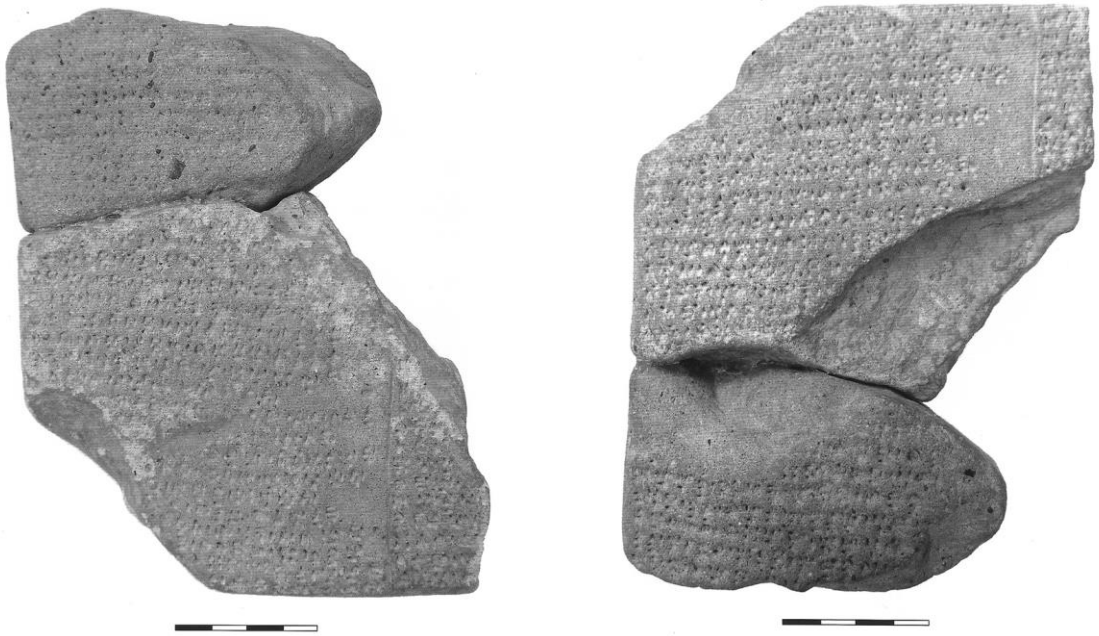


Figure 2.2: Tablet ENKO Atab 003 (courtesy of S. Ferrara).[179]

[178] Adapted from *CMI* II: Pl. XXVIII-XXIX.
[179] Adapted from *CMI* II: Pl. XXX-XXXI.

Figure 2.3: Tablet ENKO Atab 004 (courtesy of S. Ferrara).[180]

It may therefore prove fruitful to analyze the signary of this subcorpus and contrast the results with data from the rest of the Cypro-Minoan documents. Naturally, this exercise will be more fruitful if the comparison is made with relatively long inscriptions or subcorpora that are homogeneous and sizeable enough, wherein we can be certain that the same signary is employed. Shifting our *point of departure* from the arbitrary CM 1-2-3 division and its preconceived numbers of signs to an analysis of long inscriptions or coherent sets thereof, without mixing (until a later stage) sign forms from numerous short inscriptions, will allow us to view and compare the least fragmented signaries employed by Cypro-Minoan scribes. This facilitates more realistic estimations of the approximate number of total signs of those signaries.

2.2.1.1 The signary of CM 2 (ENKO Atab 002-004)

Despite its homogeneity, the signary of "CM 2" (let us continue to use the term for the sake of simplicity) requires some discussion. The assessments of É. Masson and Olivier do not coincide fully, and both are different as well from the original sign-list of the Enkomi tablets drawn by Ventris.

É. Masson listed 𐋠, a sign attested in her CM 1, 2 and 3 under number CM 08. Olivier, however, renumbered it to CM 13 and associated it with a normalized form

[180] According to Ferrara, *CMI* II: Pl. XXXII-XXXIV.

showing separated upper strokes, 𐄳, while reassigning the number CM 08 to a supposed 𐄳, distinct from the previous form by a single trait: the upper horizontal strokes are crossed by the vertical line. The problem is that Olivier sustains the presence in CM 2 of this 𐄳 based on a single doubtful example, in ENKO Atab 002.A.II.39, which neither the photograph in *HoChyMin* nor Masson's drawing corroborate (see the tablet's critical transcription in Appendix A). In reality, CM 2 possesses only one sign, 𐄳, and it consistently shows the separation of its upper horizontal bars. This is the form listed here and I maintain É. Masson's original number, CM 08. On the difficulties in distinguishing between signs CM 08 and CM 13 in the whole corpus, see 2.3.2.

The original repertory of É. Masson distinguished a form CM 64, exclusive to CM 1 (𐄴), from CM 65, peculiar to CM 2 (𐄵), but Olivier merged the two under CM 64 (cf. Figure 1.4). While it is true that the two are very similar in terms of shape (a condition which in other cases was ignored by Olivier), their distribution and other factors suggest we should be more cautious about assimilating them (see 2.3.13 for the full argument). Therefore, I maintain É. Masson's separation and respective numeration. In practice, however, this does not affect the size of the signary of CM 2.

CM 66 (𐄶) is a hapax in ENKO Atab 002.A.I.33 that Masson at first listed as a separate sign,[181] but later regarded as an allograph of CM 65 derived by means of her conjectured *épine* mechanism.[182] In *HoChyMin* it is maintained as a separate sign. Although we must agree with Olivier that the *épine* is not a real feature of Cypro-Minoan (see 2.2.3.2),[183] the fact that CM 66 is a hapax invites the possibility that this is simply a scribal mistake for CM 65 (see 2.3.13 and Appendix A), not an individual grapheme. The question remains open.

HoChyMin indicates only two attestations of form CM 81 (𐄷) in CM 2, both in ENKO Atab 002.B.II. The photograph of one of them (in line 06) did not find its way to the book, certainly by lapse, while the photograph of the second instance is of poor quality and seems to show a slightly damaged sign (line 03).[184] In any case, the photograph of the tablet in full view shows that at least in this second instance the sign has a perceptible double-bow shape[185] that is compatible with the form of CM 81 as attested in the clay balls (see 2.2.1.4). Thus, albeit with prudence, I include it in the list.

Forms CM 89 (𐄸) and 90 (𐄹), first set apart by Ventris,[186] are nearly identical. The structure of both consists of an L-shaped element made of two strokes plus inverted "U" shape in the upper right part, also drawn with two incisions. Their single difference is the feature added under this inverted "U" component: in CM 89 we have a small horizontal line, while CM 90 exhibits what resembles mostly a dot or a very short vertical stroke (Table 2.2). Both forms coexist in tablets ENKO Atab 002a/002b and

[181] É. Masson (1974: 16).
[182] É. Masson (1985: fig. 6).
[183] Ferrara (*CMI* I: 247-251) also concludes that this paleographical trait has not phonographic value.
[184] *HoChyMin*: 314, 316.
[185] *HoChyMin*: 300.
[186] Cf. the signary of ENKO Atab 003 drawn by Ventris in Dikaios (1953b: 236, fig. 3).

003, the datum used by Ferrara to argue that we should see the distinction as "deliberate".[187] Yet the notion that such a small-sized trait could be diagnostic is questionable when dealing with signs whose height does not exceed 0.5 cm. The stroke in question measures between 0.1 and 0.2 cm. Given the inscribing technique and medium of CM 2, it seems plausible that this feature reflects simply the fluctuation between a dot and a line caused by the slight difference between a quick jab and a slight sliding of the stylus on the part of the scribe. Therefore, I do not exclude the possibility that these are two variants of the same grapheme. Nonetheless, for caution I shall maintain their separate numeration throughout the analytical steps of this thesis.

Table 2.2: Secure instances of forms CM 89 and 90.

CM 89		**CM 90**		
				
ENKO Atab 002.A.I.32	ENKO Atab 002.A.I.41	ENKO Atab 002.A.I.40	ENKO Atab 002.B.I.24	ENKO Atab 003.A.02
				
ENKO Atab 003.A.13	ENKO Atab 003.B.21	ENKO Atab 003.A.20	ENKO Atab 003.A.21	ENKO Atab 003.B.14
				
ENKO Atab 004.B.08		ENKO Atab 003.B.16	ENKO Atab 004.B.09	

Form CM 91, attested with security in CM 1 and 3, is not actually attested in CM 2. Olivier includes it based on one possible yet very doubtful instance (ENKO Atab 002.A.I.42) that is more likely to be CM 87 (see Appendix A). This form can therefore be excluded from the signary in question.

The minimum number of signs in the CM 2 subcorpus is thus 57, although it could increase to 59 depending on whether CM 66 and 90 are separate signs. Despite the relatively large size of the sample, there is no guarantee that this signary is fully preserved and represented. The example of the Linear B texts from Pylos, as evoked by Palaima, serves as a warning: notwithstanding the preservation of 28,500 on 1112 clay tablets, five syllabograms of the Mycenaean script attested at other sites (*18, *22, *47, *49 and *87) remain unseen in the Pylian subcorpus.

Table 2.3 presents a list of the signs of CM 2.

[187] *CMI* I: 243.

Table 2.3: Rationalized signary of CM 2.

01		35		72	
04		36		74	
05		37		75	
06		38		76	
08		44		78	
09		47		79	
10		49		80	
11		51		81	
12		52		82	
17		54		87	
21		56		89/90	
23		59		92	
24		60		95	
25		61		96	
27		62		97	
28		65/66		102	
29		68		104	
30		69		107	
33		70		110	

It stands to reason that extrapolating the evidence of CM 2 to other Cypro-Minoan inscriptions is a reliable method only if we extrapolate first and primarily to the texts of CM 1 and CM 3 that also offer more coherent, if only incomplete, insights to the signary they employ. This requires an effort to dissolve the inconsistency of CM 1

and 3 by isolating such units, regardless of whether they are single long inscriptions or groups of epigraphically cohesive documents.

2.2.1.2 The signary of ENKO Arou 001

The first of these units is the inscription on ENKO Arou 001, a clay cylinder with a diameter of ≈4.1 cm and a width of ≈5.4 cm (Figure 2.4).[188] The text takes up the whole surface of the object and is delimited by a horizontal line that separates the beginning from the end. It contains a total of 182 syllabograms representing 39 individual signs (personal count).

Figure 2.4: Inscribed surface of clay cylinder ENKO Arou 001 (courtesy of S. Ferrara).[189]

In this regard, the individualization of the signs in the cylinder poses almost no problems, with the exception of the identity of the form transcribed "&" by Olivier (), which appears 21 times in this inscription and is so far exclusive to it. Olivier's stance in *HoChyMin* is somewhat ambivalent. In a comment to the inscription he states he is inclined to see it as a "syllabogramme, ayant la valeur de la particule enclitique « et »",[190] but in his sign tables he includes it as a "stictogram" (punctuation mark) rather than a syllabogram.[191] This leaves us doubting whether he sees it as a syllabic phonogram whose reading happens to match a suffix of copulative value (much like Linear B *-qe*), or whether he actually has in mind a logogram with the value "AND". The phonographic view is adopted by Duhoux,[192] while Egetmeyer follows the stictogram interpretation.[193] Steele points out that is much closer to the usual form of

[188] *HoChyMin*: 122.
[189] *CMI* II: Pl. X.
[190] *HoChyMin*: 123.
[191] *HoChyMin*: 414.
[192] Duhoux (2013: 28, n. 5).
[193] Egetmeyer (2013a: 111).

sign 12 (𐄒) than to the atypical form of 12 in ENKO Arou 001 (𐄓), which is not attested elsewhere. This is sufficient to at least raise the question of whether their transliteration is to be swapped.

𐄁, which I transliterate as "¶" here, is most probably not a numerical graph for 'one',[194] which would not likely be used as many as 21 times for very different types of sequences. For the actual number '1' in the Cypro-Minoan, drawn as a simple vertical line, see see 2.3.22. A priori, we might consider the copulative enclitic proposal by Olivier. We have examples in the Linear B documentation of up to three consecutive Mycenaean words ended in *-qe* 'and' (cf. *a-to-ro-qo i-qo-qe po-ru-po-de-qe po-ni-ke-qe* in PY Ta 722). This idea seems at odds with excerpts like such as 110-04-102-53-04 | 27-08-110-97-23 ¶ 19 ¶ in lines 04-05 where the second sequence ends in -23. As there is strong evidence that -23 represents some kind of suffix (see 4.2.2.2.4 and 5.5), how likely would it be to find copulation between words in different grammatical cases? As per the syllabographic hypothesis: if 𐄁 were actually a variant of CM 12 and represented a recurring suffix of the language of the cylinder, we should question why it is that the sign is not distributed similarly in other inscriptions, even in CM 1 (cf. Table 3.50 in 3.3.2.2). For the same reason, it is unlikely that 𐄁 is a syllabogram, even if one takes it to be distint from CM 12, as we would be forced to the cumbersome assumption that a highly frequent sign in ENKO Arou 001 is absent from all other Cypro-Minoan inscriptions by accident.

There is a possibility much less problematic than all of the above. If we were to consider 𐄁 a punctuation sign analogous to 𐄐, used in RASH Atab 004 as a sort of "paragraph" or entry marker, the inscription in the cylinder suddenly begins to show the structure of a list. For the sake of space and given that the cylinder's inscription will be examined with more detail in 5.6.2.1, let us consider only its first eleven lines of text (Table 2.4).

[194] This numeral consists of a simple vertical line.

Table 2.4: Transcriptions of ENKO Arou 001 according to the different interpretations of "𒉿".

Transnumeration by line		**Transnumeration by possible entries**
.01	38-87-103-23-69-23 ●	38-87-103-23-69-23 ●
.02	73-82 | 82-96-88-23 ¶ 104-	73-82 | 82-96-88-23 ¶
.03	-07 ¶ 53-09-70-12-23 ¶ 110-	104-07 ¶
.04	-102-53-04 | 27-08-110-97-	53-09-70-12-23 ¶
.05	-23 ¶ 19 ¶ 82-75-99 |	110-102-53-04 | 27-08-110-97-23 ¶
.06	104-11-24-06-12-23 ¶ 06 ¶	19 ¶
.07	26-08 ¶ | 06 ¶ 46-53-12-	82-75-99 | 104-11-24-06-12-23 ¶
.08	-23 ¶ 82 ¶ 12-25 | 110 ¶	06 ¶
.09	82-96-88-23 ¶ 09-70-26	26-08 ¶ |
.10	-75 ¶ 04-87-25 | 41-41	06 ¶
.11	-97 ¶ 38-09-75-07-21 ¶ 38-	46-53-12-23 ¶
.12	21 ¶ 107-11-24-107-27-69-	82 ¶
.13	-23 ¶ 04-09-88-08-07-21	12-25 | 110 ¶
(…)		82-96-88-23 ¶
		09-70-26-75 ¶
		04-87-25 | 41-41-97 ¶
		38-09-75-07-21 ¶
		38-21 ¶
		107-11-24-107-27-69-23 ¶
		(…)

One of the immediate implications is that signs 19, 06 and 82 would form on their own separate entries. This is not an obstacle. Examples from the clay balls, ENKO Aost 002 and other texts suggest that isolated syllabograms could be used logographically, perhaps as abbreviations, so possibly 19, 06 and 82 stand for full words. Notice also that the joint appearance of 𒉿 and 𒁹 in line 07 is not an impediment to the interpretation of the former as an entry marker. In two instances RASH Atab 004 also presents two consecutive punctuation marks, even though in that tablet 𒁺 is placed after 𒁹. While acknowledging that no solution for this problem can be offered conclusively, here I follow the view that 𒉿 is a non-phonographic sign. Thus the 39 individual syllabograms considered here.

Table 2.5 contains the signary of ENKO Arou 001.

Table 2.5: The signary of ENKO Arou 001.

04		26		73	
05		27		75	
06		35		82	
07		37		87	
08		38		88	
09		39		96	
11		41		97	
12		44		99	
19		46		101(?)	
21		50		103 (?)	
23		53		104	
24		69		107	
25		70		110	

Its lines contain an average of seven spaced out signs,[195] whose height ranges from ≈0.3 to ≈0.5 cm,[196] a size identical to that of the characters of CM 2. Albeit different from the signs of the tablets in the ductus, the signs in the cylinder are also characterized by a relative thickness of the strokes.[197] These epigraphic similarities explain why the look of some signs in ENKO Arou 001 is comparable to that of ENKO Atab 002-004. For example, signs CM 69, 70, 87 and 88 are more angular and "compressed" than most of their counterparts in the clay balls, just like their counterparts in CM 2.

2.2.1.3 The signary of RASH Atab 004

RASH Atab 004 is is an opisthographic clay tablet from Ugarit, of oblong format, measuring ≈6.8 cm x 5.8 mm x 1.7 cm (see Figure 2.5 as well as Figure 5.1). It presents the advantage of being complete, save for some damage to a small number of characters. Importantly, the height of the signs in the tablet is between ≈0.35 and ≈0.5

[195] *CMI* I: 197.
[196] *HoChyMin*: 122.
[197] *CMI* I: 197.

cm, which compares evenly with the characters of the CM 2 tablets and ENKO Arou 001.[198] Another feature shared by this Ugarit tablet and those of Enkomi are the relatively thick strokes and somewhat angularized sign forms. As a result, some have close formal parallels in ENKO Arou 001 and in CM2 (see Table 2.1 in 2.1). Thus, we need to mitigate É. Masson's view that the ductus of the signs of RASH Atab 004 as "very special".[199]

Figure 2.5: Tablet RASH Atab 004 (courtesy of S. Ferrara).[200]

In total, the nineteen lines of the tablet in question contain 157 signs that can be read with certainty. Despite the good condition of the object, the assessment of the number of individual signs involves some difficulties. É. Masson discerned with "more or less certainty" 36 different graphemes, but five signs identified by her and maintained in Olivier's edition of the tablet raise questions: these are CM 11, 37, 58, 69/71 (which may or may not represent the same sign) and 103.

CM 11 (𐎋) is identified by Olivier in line B.19 (𐎍), a possibility which, albeit considered, was ultimately not followed by É. Masson.[201] As shown in Appendix A, the presence of this sign is indeed dubious.

The form 𐎧, attested three times (A.09 and B. 17), was interpreted by É. Masson as a variant of CM 37 (𐎩), even though it contains one stroke less. Olivier follows her reading, but marks it as doubtful. As argued in 2.3.8 and Appendix A, this is more likely an allograph of CM 41 (𐎤, 𐎦). Whichever interpretation is correct, it does not affect the quantification of the signary.

Three signs on the tablet have been identified as CM 58, supposedly exclusive to this document. A closer paleographical examination suggests that the first instance

[198] É. Masson (1974: 29); *HoChyMin*: 399.
[199] É. Masson (1974: 35).
[200] *CMI* II: Pl. XLI-XLII.
[201] *HoChyMin*: 407.

might be a variant of CM 25 or 102, whereas the second is more difficult to account for (see Appendix A). I consider the identification of this sign as an independent Cypro-Minoan grapheme exclusive to Ugarit an open question and therefore list it hesitantly.

According to *HoChyMin*, there is a single and doubtful occurrence of form CM 69 in RASH Atab 004 (). One may wonder whether this is really different from the CM 71 (,). This issue is addressed in 2.3.15.

The first sign in line A.08 () is read by É. Masson and Olivier as CM 103 without any questioning. However, the ductus of the sign is different from the alleged examples of CM 103 in CM 1 (see the full argument in 2.3.20 and Appendix A). In addition, the fact that it is word-initial increases the suspicion that it might be an instance of CM 102 without the central horizontal stroke, as the result of a lapsus on the part of the inscriber. It is unlikely that this is a separate sign.

In conclusion, the number of independent graphemes in RASH Atab 004 ranges between 33 and 36. Table 2.6 recapitulates the signary of the tablet.

Table 2.6: The signary of RASH Atab 004.

01		28		74	
02		35		75	
04		37		82	
06		38		87	
08		40		91	
09		51		92	
11(?)		55		95	
19		58(?)		96	
21		69(?)		100	
23		70		102	
25		71		104	
27		73		105	

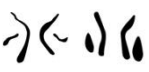
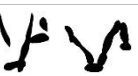
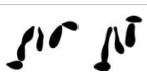
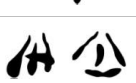
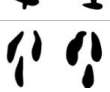
2.2.1.4 The signary of ENKO Abou 001-084

Finally, I consider the clay balls from Enkomi (ENKO Abou 001-084). To be sure, they comprise multiple texts with a high range of paleographical variation (they even attest to different scribal hands), but they were written at the same site and on a very specific support, which means they almost certain employ signs drawn from the same syllabary. In total, the sample comprises ca. 325 syllabograms (personal count).

Figure 2.6: Example of inscribed clay ball: ENKO Abou 001 (courtesy of S. Ferrara).

The signary employed by the clay balls as presented here contains between 52 and 53 forms, depending on whether we interpret CM 101 and 102 as the same grapheme (see 2.3.20). However, this presentation precedes the analysis in 2.3, so the number is not definitive. Below, some mergers will be proposed and the amount of individual signs will decrease further. Nevertheless, we can justifiably exclude some ghost forms that enter in the accounts in HoChyMin, particularly CM 75, 78, 95 and 101 (see the corrections to ENKO Abou 005, 010, 012-013, 021, 031 and 075 in Appendix A).

Table 2.7: The signary of ENKO Abou 001-084.

01		34		73	
04		36		81	
05		37		82	
06		38		85	
08		39		86	
09		41		87	
12		44		88	
12b		46		91	
13		50		96	
15		53		97	
17		55		99	
19		59		101/102	
21		61		103	
23		64		104	
24		67		107	
25		69		110	
27		70		112	
28		72			

2.2.1.5 KALA Arou 001-005

This inscription deserves a brief comment. Like ENKO Arou 001, it consists of a clay cylinder with a relatively long text (eighteen lines of text). Unfortunately, the latter underwent a "complex process of defacement" and re-inscribing,[202] first detected by

[202] *HoChyMin*: 135.

Smith.[203] Overall, its reading is very difficult (see Appendix A), and so an appraisal of the signary it employs would hardly lead to solid results. The other clay cylinders from Kalavasos-*Ayios Dhimitrios* (KALA Arou 002-005) have been discovered in the same building and certainly belong to the same writing tradition and employ the same signary. Yet they are equally problematic, as due to their fragmentary condition they preserved little and very poorly-preserved text. For this reason, these inscriptions are excluded as a viable homogeneous subcorpus.

2.2.1.6 Mackay's formula and the signaries of the selected subcorpora

In an article published in 1965, Mackay sought to estimate the number of script signs contained in the famous Phaistos Disc, assuming the object bore a real system of writing. This assumption is nowadays disputed,[204] but as a by-product of his research Mackay developed a tool useful for estimating the approximate total number of signs in a sample of text of any undeciphered script whose complete signary is unknown. The formula is based on the premise that a number of alphabetic and syllabic scripts follow "the same general frequency distribution". The writing systems that served as foundation to the formula were ten (including two different samples for Hiragana Japanese and English: six alphabets, one consonantal alphabet and three syllabaries, including Linear B and Cypro-Minoan itself.[205] The simplified representation of the formula, which we owe to Duhoux, is as follows:[206]

$$((TC \times TC) : (TC - TG)) - TC$$

TC = Total number of characters in the sample
TG = Total number of separate signs (graphemes) attested in the sample

Duhoux has recently demonstrated that Mackay's formula can be applied to syllabaries of Aegean-Cypriot group with satisfactory results. He first tested it on the Cypro-Greek syllabary, particularly on its longest known inscription: the renowned bronze tablet from Idalion (*ICS* 217), with more than 1,000 signs. To date, 55 different syllabograms are known to have formed the so-called "Common" variety of the Cypro-Greek syllabary, the one employed in *ICS* 217. The formula estimated that the inscription was written with a signary of ≈54 (53.7) signs,[207] which is a fairly accurate prediction of the size of Cypro-Greek signary and represents an underestimation of only one sign, or 2.4%.

[203] Smith (2002: 21; 2003: 283-284).
[204] See e.g. Whittaker (2005: 31-32).
[205] Mackay (1965: 17-18, 25 and *passim*). The author used a sample from CM 2 which he dubbed "Cypriot (Enkomi)".
[206] Duhoux (2009b: 44, n. 21; 2013: 28, n.6).
[207] Duhoux (2009b: 44, n. 21).

The fruitful test with Cypro-Greek incites us to consider Duhoux's application of the formula to Cypro-Minoan, as shown in Table 2.8.

Table 2.8: Application of Mackay's Formula to CM 1, 2 and 3, according to Duhoux.[208]

Sample	Signs in Sample	Different graphemes	Mackay's estimate
CM 1	1,079	72	≈77 (77.2)
CM 2	1,369	61	≈64 (63.8)
CM 3	253	50	≈63 (63.2)

In his exercise, Duhoux used as samples the three traditional subsets of inscriptions, CM 1, 2 and 3, each naturally comprising more than one text. Yet there are reasons to suspect that using the formula on a sample that amalgamates multiple independent texts leads to misleading results. Besides testing it with Cypro-Greek, Duhoux made the same calculation with a sample of Linear B texts from Knossos. The result was the estimation that the Knossian variety of Linear B contained 72 syllabograms which, compared to the 88 "core" syllabograms of the Mycenaean script, indicates an underestimation of 19.3%. This is not very faithful. Duhoux does not provide many details on the test and only mentions that the sample totaled 1,124 "syllabograms".[209] However, the problem seems to lie in three factors: (1) the calculation was not based on a single large text (which in Linear B is difficult to find), but on multiple inscriptions; (2) the script contains a logographic component whose signs were apparently excluded from the count; (3) the total number of Linear B syllabograms is not known with exactitude, as a small them remain undeciphered and could be either independent syllabograms or allographs of other signs. Thus, Mackay's formula seems to produce reliable estimations only when the sample consists of a single long inscription, as was the case with Cypro-Greek. Another problem with Duhoux's calculations is that the variable "total number of independent graphemes in the sample" corresponds to the number of signs *listed by Olivier* for each of the subsets (CM 1, 2 and 3). This introduces a highly subjective element, as the results become inevitably dependent on Olivier's description of the signary.

Let us, thus, remove the two factors that potentially affect the results: (1) the samples of multiple, and on occasion heterogeneous, inscriptions; and (2) the counts of individual graphemes based on the traditional scheme (with mixtures of texts). Instead, let us apply Mackay's formula on samples of single long texts, where the identification of the individual signs is much less dependent on subjective views. I have selected ENKO Arou 001, ENKO Atab 003.A and RASH Atab 004 for their length and completes. Table 2.9 shows the results of my calculations.

[208] Duhoux (2013).
[209] Duhoux (2013: 28, n. 6).

Table 2.9: Application of Mackay's Formula to three long Cypro-Minoan inscriptions.

Sample	Signs in Sample	Different graphemes	Mackay's estimate
ENKO Arou 001	182	39	50 (49.6)
ENKO Atab 003.A	284	50 ↔ 51	61 (60.7) ↔ 62 (62.2)
RASH Atab 004	161	33 ↔ 36	42 (41.5) ↔ 46 (46.4)

As ENKO Atab 003.A is longer, better preserved and has a higher amount of legible signs, we expect its result to be closer to the total number of signs in the signary it employs. The calculation suggests that its complete signary contains 61 or 62 syllabograms, which is only slightly higher than the total number of separate graphemes attested in the four CM 2 inscriptions: 57-59 (Table 2.11). This result is satisfactory because it leaves room for a few rare signs that might *currently* be unattested in CM 2, but do appear in other inscriptions.

Conversely, RASH Atab 004 represents the smallest sample, so it is expected that its result is the least faithful: this might explain why its result, 42 to 46 syllabograms, is so different fromt hat of ENKO Atab 003.A.

Finally, the result of ENKO Arou 001 reveals a paradox. The inscription has been part of CM 1, which the proponents of the traditional division maintain is a distinct writing system. It is actually the longest of the subset, so one should expect it to reflect the alleged CM 1 script the closest. Yet Mackay's formula suggests that the signary employed in the inscription contains 50 signs, which is at odds with the 72 syllabograms envisaged by Olivier for this alleged subscript.

Only two explanations seem possible: either the formula cannot estimate realistically the total number of signs in the script(s) used in the longest Cypro-Minoan inscriptions, or the number of CM 1 signs listed by Olivier is inflated—probably owing (as already mentioned) to the inclusion of rare and hapax forms from various short inscriptions that are allographs of signs used in the longer texts.

2.2.2 Criteria for discerning graphemes and allographs

Having seen that the sign-list that is now widely cited has a number of inconsistencies, we need to look for a set of methods that allows us to distinguish individual graphemes in a more balanced and secure manner. As mentioned in 2.1, we need to keep in mind that at a pre-decipherment stage it is impossible to achieve this with absolute certainty and that to a certain extent we have to proceed by trial and error. This is precisely the reason that we should break with the tendency that has governed many studies of Cypro-Minoan up to date of treating the number of signs differentiated and inventoried as definitive and acknowledge the provisional status of those identifications.

2.2.2.1 Ductus: diagnostic vs. optional strokes

The "identity" of a grapheme is associated primarily to our ability to distinguish it visually from other graphemes of the same writing system. For this we rely on distinctive formal traits that characterize the sign in question but are absent from all others. Such traits can be termed "diagnostic" and the visual identity they construct for any given sign may be understood as a "template" or "normal" form. When mapping the range of paleographical variation of a sign it is crucial, therefore, to discern between diagnostic and optional traits. By optional traits I mean the non-essential visual attributes without which the identity of the grapheme is still recognized more or less effortlessly.

This is, of course, the situation on a theoretical level. In practice, epigraphical factors complicate the paleographical aspects of a writing system. The writing media are determinant in the case of long-lived, multipurpose scripts that like Cypro-Minoan were written on a variety of materials. Despite the criteria she used for categorizing Cypro-Minoan, even É. Masson did not fail to stress that one sign may look fairly complex if drawn on moist clay, but rather schematic and linear if incised in metal, stone or baked pottery.[210] As we have already seen, additional factors come in, such as the writing implement, the inscribing angle and restrictions to the size of the signs. The idiosyncrasies of scribes also play a role: despite using the same medium, scribes that wrote on wet clay could have different stylistic tendencies, either towards simplification or towards embellishment. Bennett Jr., who was responsible for the groundwork on the paleography of Linear B, soon observed that Mycenaean signs varied concerning several aspects: the number of strokes is variable, and "non-essential" ones may be added in the fashion of "serifs"; simple lines may be elaborated (and vice-versa); the length of the strokes changes, as does the general size of the signs.[211] With Cypro-Minoan, for example, the writing styles in the Enkomi clay tablets and (at least to some extent) RASH Atab 004 from Ugarit involve fairly small signs jabbed into the clay with a stylus of relatively blunt tip. As a consequence, traits seen in other subcorpora such as "feet," "legs" and acute curves were impractical in these documents. Signs CM 70, 87 and 92 are cases in point (see 2.3.19 and Table 2.1).

When we deal with an undeciphered writing system, this scale of variation poses obstacles to diagnoses based only on formal analysis. Thus, similarity of form on its own cannot be taken as an indication of equivalence: we need to consider other factors besides paleography.

[210] É. Masson (1974: 12).
[211] Bennett (1958: 90), apud Palaima (2011: 94).

2.2.2.2 Complementary distribution

Another crucial condition for identifying two forms as variants of the same grapheme is that they occur in complementary distribution. If two forms are found to coexist in the same inscription, or set of homogeneous inscriptions, it becomes likely that they do not represent the same grapheme. There are, of course, exceptional cases. For example, if two different scribal "hands" participated in the writing of one text and produced different versions of the same sign. Moreover, some writing systems feature allographs that are used in complementary distribution, as with the lowercase form of the Greek letter sigma, which which word-finally is ς, but elsewhere σ. It is true that none of the other better-known Aegean-Cypriot syllabaries possesses such a feature, making it very unlikely to occur in Cypro-Minoan, but the possibility deserves mention. Conversely, if two forms never coexist, it cannot be considered proved that they stand for different graphemes because their non co-occurrence may be accidental, but the larger the sample the likeliest their separation is.

2.2.2.3 Positional frequency

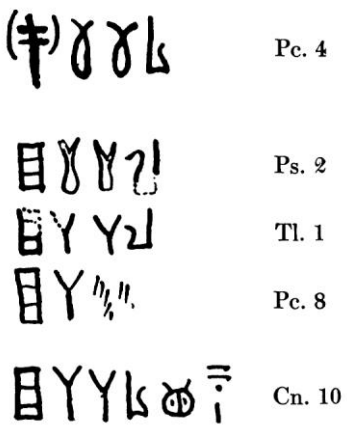
Whenever the number of attestations of a sign is statistically relevant, this is the third factor to consider.[212] Whether a sign is prone to appear in a certain position within a sequence (initial, medial or final) or not at all, its paleographical variant ought to behave in a similar way. Conversely, sign shapes that have a preference for different positions in a sequence are in principle more likely to be unrelated. Of course, the same sign might be used differently in distinct subcorpora owing to linguistic reasons, if these are employed to write different languages.

2.2.2.4 Contextually-determined alternations

This is the fourth criterion. If forms whose ductus is only slightly different alternate in sequences that otherwise feature the same syllabograms and are identical (see the example in Figure 2.7), then that alternation constitutes circumstantial evidence of allography. It is important, however, that there is contextual proof that the sequences compared represent in fact the same word.[213]

[212] Already É. Masson (1974: 12).
[213] Again, for Cypro-Minoan, see already É. Masson (1974: 12).

Figure 2.7. Instances of Linear A sign-sequence *ja-sa-sa-ra*(-) written with different paleographical variants.[214]



In the analysis undertaken in 2.3, the four criteria above will be taken into account and no proposal for individualizing a grapheme will be made if the first two are not fulfilled.

2.2.3 The structure of Cypro-Minoan: a typological framework

2.2.3.1 Types of signs and structural observations

The Cypro-Minoan inscriptions employ three functional types of signs whose distinctiveness is uncontroversial: phonograms (signs that represent sounds of speech), numbers and punctuation signs. Phonographic signs are easily distinguished because they are used in sign-groups. That they are of syllabic character and most probably represent only open syllables (V and CV or related types) is indicated by the total number of Cypro-Minoan signs employed by the inscriptions (whether their number is 96 as Olivier asserts or smaller), as well as by the fact that this is the case with the three related Aegean-Cypriot syllabaries that are legible to some extent, Linear A, Linear B and Cypro-Greek.[215] This point is hardly new or controversial.[216] Not counting the punctuation signs and numerical notations, all characters that occur in isolation also appear at least once in sign-groups, i.e. they are all phonograms. In other words, the Cypro-Minoan inscriptions do not employ a set of logograms for commodities. This constitutes the precedent for the Cypro-Greek, but breaks away from the Linear A and B "palatial" tradition. This does not mean that Cypro-Minoan had no signs with logographic functions: most, if not all writing systems possess such components. Besides the numbers and punctuation signs, which *stricto sensu* are logographic, Cypro-Minoan may well have used syllabograms secondarily as logograms, in particular in

[214] From Kober (1948: fig. 3).
[215] On the probable absence of VC and CCV syllabograms from Linear A see Duhoux (1989: 63-64).
[216] Already Olivier (2007: 15) and Ferrara (*CMI* I: 221), among others.

cases where they appear in isolation, as abbreviations (but notice that isolated signs can naturally represent monosyllabic words as well). Differently, Olivier classifies two signs that are not used in sequences as logograms proper, namely in ENKO Aost 001 and KALA Ppla 001.[217] These he transnumerates as CM 201 (𐄷) and 202 (𐄸). However, as argued in the critical transcriptions provided in Appendix A, they may well be instances of CM 98 and CM 26, respectively. What suggested to Olivier that these signs might be primarily logographic was certainly the fact that ENKO Aost 001, an ostracon, is the only Cypro-Minoan inscription where isolated signs are followed by numerals in different entries, a structure that is reminiscent of the Linear A administrative tablets, where commodity logograms are commonly used in the same position. Nevertheless, a single inscription, as short and simple as it is, is hardly sufficient to establish the existence of a logographic component in Cypro-Minoan. It is more likely that ENKO Aost 001 simply makes a specialized used of syllabograms in what seems to be an accounting document of some sort.

Although the relations between Cypro-Minoan, Linear A and Cypro-Greek are addressed in detail only in Chapter 3, in anticipation to that here we can compare Cypro-Minoan with related scripts to look for structural features that are common to all. This goes beyond the well-accepted point that Cypro-Minoan phonograms represent open syllables, as enunciated in the foregoing paragraph, and can be explored for other structural aspects. The premise is the following: if a given feature is present in the Aegean-Cypriot syllabaries that are legible to some extent (Linear A and, especially, Linear B and Cypro-Greek), then *most probably* it is present in Cypro-Minoan as well. This premise will hold even if the Cypro-Minoan inscriptions one day prove to encompass more than one syllabary. However, in such a scenario, it would be theoretically possible that secondarily-derived varieties of Cypro-Minoan moved away more drastically from the Aegean type. Of course, the above postulate leads to hypotheses that require confirmation, not facts. Uneconomical as it may seem, there is the possibility that a writing system develops features that deviate from both its model and its derivative.

Thus, as shown in Table 2.10, beside V (vowel) and CV (consonant + vowel) syllabograms, Cypro-Minoan might have had some "complex" signs of the type $C^{C}V$ (i.e. C*j*V and C*w*V), which are part of Linear A and B (on their value see 3.2.3), but not Cypro-Greek. Notice that the Cypriot Greek syllabary uses two signs that are *de facto* CCV, *ksa* and *kse*, but these are most likely secondary creations as adaptations to the Greek language (see 3.3.3). Albeit possible, the existence of complex syllabograms of the $C^{C}V$ or CCV type in Cypro-Minoan is very unlikely: the number of syllabograms used the four selected subcorpora ranges from 36 to 59 (Table 2.11), which is much closer to the 48-55 signs employed by the varieties of Cypro-Greek than the estimated 95 syllabograms of Linear A.

[217] *HoChyMin*: 115, 264, 414.

Table 2.10: Expected structural features of Cypro-Minoan based on a comparison with its relatives.[218]

Type of sign	Linear A	Linear B	Paphian CGk[219]	Common CGk[220]	Cypro-Minoan (Expected)
V	$5^{(?)}$	5	5	5	$5^{(?)}$
CV	≥ 48	57 ↔ 70	38	48 [221]	38 ↔ 70
V + CV	≥ 57	62 ↔ 75	43	53	43 ↔ 75
CCV	—	—	—	2 [222]	Unlikely
C^CV	≥ 4 [223]	9 [224]	—	—	Unlikely
Logograms	Yes	Yes	No	No	Unlikely
Untransliterated	≥ 34	13	—	—	N/A
Max. syllabograms possible[225]	95	75	43	55	43 ↔ 95

Table 2.11: Number of individual signs in the selected subcorpora.

Subcorpus	Inscriptions	Total signs (legible)	Individual signs (Graphemes)
CM 2	4	≈1,300-1,500	57-59
ENKO Atab 003.A	1	284	50-51
ENKO Arou 001	1	182	39
RASH Atab 004	1	157	33-36
ENKO Abou 001-084	84	≈352	51-53

The last observation concerns the possible organization of the Cypro-Minoan syllabary in a five-vowel grid (*a*, *e*, *i*, *o* and *u*). This is likely, but far from secure. Linear B and Cypro-Greek have grids essentially pentavocalic and the same framework is argued for Linear A, despite the "incompleteness" of the *e*- and *o*-series in the Minoan

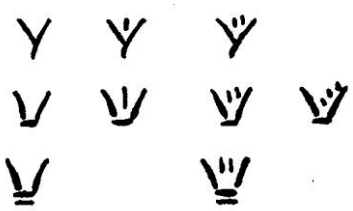
[218] Partly adapted from *CMI* I: 232, Tab. 5.8.
[219] According to *DGAC*: 49-50, Tab. V-VI.
[220] *Ibid*.
[221] One sign of uncertain value (𐘪 = *ga*$^{?}$ or *za*$^{?}$) is counted as CV and not as "Unknown". See 3.4.4 on the value of this sign.
[222] This refers to the "special" Cypro-Greek syllabograms *xa* and *xe*, used only word-finally (*ICS*^{2}: 56, 76-77; *DGAC*: 222-223). These are thought to have been inspired by the biphonemic letter ξ (/ks/) of the Greek alphabet (*ICS*^{2}: 56). See full discussion in 3.3.3.
[223] Apart from the already known *ra*$_2$ (*r*^{j}*a*), *ta*$_2$ (*t*^{j}*a*) and possibly *t*^{w}*e*, the syllabogram *n*^{w}*a* has recently been identified in Linear A (Muhly and Olivier 2008: 207-208; cf. also B. Davis 2014: 196). Notice that none of these syllabograms are of the CCV type. They are best described as C^CV, where C^C probably stands for consonantal phonemes with secondary articulation (palatalization or labialization). If this is the case, then they might actually be conceived of as CV signs.
[224] This includes *pte*, interpreted by some Mycenologists as original **p*^{j}*e* (i.e a C^CV sign).
[225] This corresponds to the sum of deciphered syllabograms and "unknown" type signs.

logo-syllabary.[226] However, the state of decipherment of Linear A advises caution and leaves some room for the possibility that the five-vowel scheme was an independent innovation in the two syllabaries used for Greek dialects.[227]

2.2.3.2 The mechanical design hypothesis

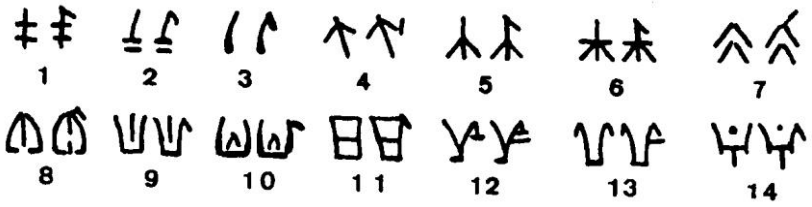
"Mechanical design hypothesis" is used here to refer to a set of proposals put forward by É. Masson (1985) regarding the creation and structure of Cypro-Minoan. She argued that CM 2—in her scheme an independent script—introduced new signs design by introducing systematic graphic modifications to preexisting forms (although to her mind these processes were "generalized" and affected all of her theorized Cypro-Minoan scripts).[228] Essentially, she claimed that the signaries of Cypro-Minoan comprised groups of formally-related signs, each set including one basic form from which several new signs were derived by adding further strokes, as seen in the example in Figure 2.8.

Figure 2.8: One of É. Masson's group of allegedly mechanically-designed Cypro-Minoan signs: CM 82 (upper left) and its supposed derivative forms CM 83, 84, 59, 86, 62, and 64.[229]



É. Masson also adduced another mechanism that she termed *épine* ("thorn"). This refers to a small oblique stroke allegedly added to the upper right part of certain signs for some unclear functional purpose. In her view, the *épine* intervened in fourteen pairs of sign shapes (Figure 2.9).

Figure 2.9. Sign forms that participated in the *épine* mechanism according to É. Masson.[230]



[226] See B. Davis (2014: 240-242).
[227] I thank Steele (pers. comm. May 12, 2012) for underlining this possibility.
[228] É. Masson (1985: 149).
[229] É. Masson (1985: fig. 3:1). Notice that it is nowadays clear that signs CM 83 and 84 are ghost forms (see 2.2.1.4, 2.3.21 and Table 2.89).
[230] É. Masson (1985: fig. 6).

These pairs supposedly represented allographs of one grapheme, one with and one without the *épine*, and therefore ought to be listed under the same number. In other words, pairs such as 𐄀 and 𐄁 would be regarded as the same sign.[231]

In *HoChyMin*, Olivier candidly ignores these proposals and therefore they have no representation in his own signary.[232] For this reason, the mechanical design hypothesis has been overlooked in the majority of the literature on Cypro-Minoan published after 2007. Ferrara, however, dedicates a whole subsection of *CMI* I to reviewing it critically. Since this hypothesis would have implications for the structure of the signary should it be correct, and because reviewing its weak points might serve to discard invalid premises as regards the individualization of signs, here they will also be discussed.

The discussion must begin with two terminological clarifications. É. Masson labeled some of her alleged mechanical designs as "ligatures" or "reduplications", yet Ferrara is dismissing them as synonymous or even appropriate descriptions of what Masson meant.[233] With Linear A and Linear B, specialists apply the term ligature to any compound of two or more signs with logographic value, whether the constituents are all syllabograms (e.g. Linear B *me+ri* 'HONEY') or a logogram plus one or more syllabograms (e.g. Linear B TELA+*te*, which refers to a type of cloth). Since Cypro-Minoan lacks a logographic component for denoting commodities comparable to that of the Aegean scripts, the label "ligature" is not very helpful for analyzing the Cypriot signs. Yet Masson's use of the term "reduplication" is not fully precise either: what she described are actually two types of "splitting" processes whereby one sign yields new ones by means of various graphic additions. Thus, "reduplication" is an acceptable label onlyu for one of her types of splitting, namely her hypothetical doublings, such as CM 21 𐄩 > CM 81 𐄪. The second kind of split she proposes, e.g. CM 21 𐄩 > CM 79 𐄫, rather presupposes creating a new sign by attaching a sort of diacritical mark to another.

This leads us to the second terminological clarification. In grammatological terms, we need to distinguish between two basic types of *diacritics*: (1) a mark that differentiates two signs *formally*, without any phonological motivation or implication; (2) a mark that distinguishes formally two signs for sounds which are close in terms of articulation and denotes a specific *phonological contrast*.[234] Letters 𐤐 and 𐤓 in the Latin alphabet are examples of "formal" diacritics. In the earlier versions of the script there were forms closely related to their models in the Etruscan alphabet, for example 𐤒 > 𐤐 for /p/ and 𐤐 for /r/. Due to paleographical developments, in time 𐤐 and 𐤐 became dangerously similar. To avoid ambiguity, a mark was added to 𐤐 and changed it to 𐤓. The relation between these two letters is thus strictly *formal*. "Phonetic" diacritics can also be explicated with an example from the Latin alphabet. Given that the Etruscan

[231] É. Masson (1985: 151-154).
[232] *HoChyMin*: 15.
[233] *CMI* I: 245.
[234] Thanks are owed to my supervisor, I.-X. Adiego, for helping me to outline this technical distinction.

script had no letter for the Latin voiced velar stop /g/, the creator(s) of the new alphabet chose to recycle Etruscan Ⅽ for their phonemes /k/ and /g/. In the later history of the Latin script, however, a new letter was devised specifically for /g/ by attaching a mark to Ⅽ: this yielded Ⅾ. Thus, the appendage that derived Ⅾ from Ⅽ denotes a phonological contrast, one that Ⅽ underrepresented, and the two signs are phonetically related.

Once we have clarified terminological aspects, we can address the shortcomings of É. Masson's hypothesis. Already on the surface there is a problem of formulation. While her early work on Cypro-Minoan involved assigning tentative phonetic values to the signs, her mechanical design proposals were made essentially in abstract terms. Hence, she theorized groups of allegedly-related sign forms, but was not clear about whether these formal connections also resulted in related phonetic values for the signs in question. For example, in 1974 Masson read CM 75 () as *ra*,[235] but did not assign any sound value to CM 76 (). If she later argues that CM 76 is originally a reduplicated CM 75, should we take this as a claim that the two had related sound values?[236]

While this vagueness makes it impossible to assess É. Masson's proposals fully, it does not automatically invalidate them. Their two crucial shortcomings are their premises and consequences. Ferrara has not failed to notice that the kind of systematic and mechanical sign composition postulated by Masson would result in a script more akin to the type known as "abugida" or "alphasyllabic", such as the Indic scripts of South Asia or the Ethiopic ones of Northeast Africa, than a syllabary. Abugidas are defined as scripts whose signs have syllabic values, but (unlike typical syllabaries) differentiate graphically between the consonantal and vocalic components of the syllable. Thus, for each consonantal row of the system the point of departure is a sign that denotes the consonant and an inherent vowel (often *a*), and the syllables with the same consonant but different vowels are designed by modifying this basic C(V) shape.[237] In the case of the Devanagari script, each syllable has a basic form for the consonantal value C(*a*) to which a different "diacritic" for each vowel other than inherent *a* is added.[238] It is true that some syllabic scripts may feature sets of diacritics (and even reduplication) for marking phonological contrasts: for example, the two Japanese syllabaries, *Hiragana* and *Katakana*, use diacritics to distinguish voiced and voiceless versions of the obstruents, and between stops (*b*, *p*) and fricatives (*h*) in the labial series. As a result, the 46-48 basic sign shapes of these are complemented by 58 derivative ones.[239] Nevertheless, the high numbers of signs in each of É. Masson's groups of hypothetically-related Cypro-Minoan signs (8 out of 9 in the example of Figure 2.8) are only comparable with the structure of an abugida. Her scheme

[235] É. Masson (1974: fig. 26).
[236] *CMI* I: 246.
[237] Daniels (2000: 74).
[238] Bright (1996: 387 and 2000: 64)
[239] Labrune (2012: 10).

presupposes proportion of innovated signs so high that Cypro-Minoan's architecture would have had to undergo a dramatic transformation of its Aegean model that cannot be reconciled with the amount and values of Cypro-Minoan signs that are formally and phonetically identical in the Aegean scripts and Cypro-Greek (see 166).

Even É. Masson noticed this is typologically unusual in the Aegean-Cypriot scripts,[240] where signs innovated by means of reduplication or diacritics are *very rare*.[241] I am aware of only one possible case of reduplication in Linear B. It has been suggested that the syllabogram 𐀳𐀳 (*dwo*), introduced anew in the Mycenaean syllabary, consists of a doubling of the preexisting 𐀳 (*wo*) in what would be a pun with the Greek word for 'two'.[242] Yet if this was the rationale for its creation, we should consider it a strictly *acrophonic* creation, not a doubling: *wo* would have provided the graphic basis, but not the phonetic value, which would actually be determined by the word-play with Mycenaean /dwo/ 'two'. Innovation by splitting is equally rare in the Cypro-Greek syllabary, where the only obvious example is that of syllabograms 𐠷 (*to*) and 𐠸 (*tu*) (for another possible case, see 3.3.3). Presumably, 𐠸 was created by adding to 𐠷 a diacritical mark that consists of two vertical strokes, whose purpose would be to distinguish phonetically between two Greek vowels that are similar in articulatory terms (both *o* and *u* are rounded vowels), but still contrastive (again, see 3.3.3). These cases reflect *ad hoc* solutions to a small number of lacunae generated by the characteristics of the language for which the new script was adapted (Greek) rather than profound structural modifications. As we will see in the next chapter, Cypro-Minoan shows signs of not being the product of a drastic adaptation, so if the script introduced new signs by resorting to reduplication or diacritics, a priori they should not be numerous.

Upon closer inspection, it becomes clear that the mechanical design hypothesis leads to controversial results because it is based on an erroneous premise. When dealing with an undeciphered script, any attempt to identify phenomena of sign-splitting based *only* on formal similarity is perilous. The Cypro-Greek syllabary well illustrates this point. If the script were still undeciphered, the principles postulated by É. Masson might lead us to regard 𐠁/𐠢/𐠣/𐠤, 𐠃/𐠥/𐠦, 𐠀/𐠪, 𐠋/𐠌/𐠍, and 𐠷/𐠸 as groups of signs with the same template and related phonetic values. Yet the reality is that they read as *sa*/*re*/*o*/*so*, *ri*/*ne*/*ke*, *ja*/*ra*, *ru*/*wa*/*me* and *to*/*tu*. Thus, more often than not, *form* does not correlate with *value*. Only in the last group, with *tu* (𐠸) < *to* (𐠷), do we have such a relation.[243] This shows how dangerous the assumptions of Masson are.

In a way, the opposite problem affects É. Masson's *épine* and hypothetical diacritics: two similar forms, different only in the presence of one extra stroke in one of

[240] É. Masson (1985: 149).
[241] *DocMyc*^{2}: 40.
[242] Palaima and Sikkenga (1999: 605).
[243] Bennett (1947: 99, apud Palaima 2011: 55) made long ago the suggestion that Cypro-Greek was mechanically designed, with several of its signs sharing common basic structures, but this feature is the result of internal paleographical developments, not creations of phonetically-related signs across the board (see 3.3.3).

them, might sometimes represent a single Cypro-Minoan grapheme, with no modification of its value whatsoever. We need to bear in mind Bennett's aforementioned observation that it was a fairly common practice amongst Mycenaean scribes to add non-essential strokes to Linear B signs (2.2.2.1). Often a sign of the Mycenaean syllabary displays significant paleographical fluctuation and features allographs with non-diagnostic, non-functional traits (see Figure 2.10).

Figure 2.10: Variants of Linear B sign 31/*sa*.[244]

Linear B is a warning that Cypro-Minoan forms assessed in 2.3 like CM 61 (𐄩) and 63 (𐄫) are not necessarily different signs, while other cases such as CM 53, 54 and 55 (𐄧, 𐄨, 𐄪) might simply represent the fan of variation of a single grapheme, with various degrees of optional traits.

2.3 Analysis

Although the corpus of Cypro-Minoan is not large, I would like to stress that the goal of the following is not to compile each example of every single Cypro-Minoan sign in all attested inscriptions. Sign shapes will be charted to the degree required by the persisting problems of paleography. A full paleographical survey is offered for those forms suspected of being wrongly individualized, while the variation of signs whose identity is uncontroversial is sometimes mapped partially as a means of comparison. A good example is sign CM 102, whose existence has long been noticed and beyond question. Therefore, I have counted 82 occurrences of the sign, which often display tremendous paleographical oscillations, but have not produced a table with drawings of all of them. The issue that needs to be addressed is whether forms CM 101 and 103 are allographs of CM 102, so in section 2.3.20 I compare the former with the relevant variants of the latter. Of course, the paleographical problems addressed in this thesis are determined by my own views of the material, but all efforts are made to present the evidence on which these subjective choices are based. For example, I agree with the consensual view—expressed in all sign lists—that form CM 97 corresponds to an independent Cypro-Minoan grapheme well attested in the main subcorpora. In section 2.3.14, I argue that the few alleged examples of CM 68 in "CM 1" are more likely to be allographs of CM 97 and that the form CM 68 is actually restricted (or almost) to CM 2. This reflects my interpretation, but the problem is presented in such a way that other scholars have a

[244] Examples from Skelton (2008: 168, Fig. 3).

basis to decide whether they agree it exists and with the proposed solution. The focus on the problematic cases also means that a good number of sign shapes listed in *HoChyMin* and not discussed here and are to be maintained. This is the case with 32 signs: CM 01, 04, 06, 07, 09, 11, 12, 17, 23, 24, 25, 27, 28, 29, 33, 36, 38, 40, 44, 52, 59, 60, 70, 74, 80, 82, 87, 92, 97, 104, 107 and 110. The ghost forms discarded in 2.2.1.4 and Appendix A will not be considered.

The analysis is conducted in a series of subsections, each discussing one sign form or a set of sign forms from *HoChyMin*. The sign-list of Olivier, nowadays the main reference in the field and already much rationalized, is used as a starting point, but, where the modifications introduced by the author raise doubts, É. Masson's original repertoire was also considered (see e.g. 2.3.2 and 2.3.13).

It should be noticed that, despite the priority given to selected homogeneous subcorpora, my analysis of the Cypro-Minoan signary will not exclude other inscriptions. As already explained above, the selected units serve as a starting point because they are more informative, so the signs attested in other inscriptions will be examined in the light of this clearer material. I will, however, the tablet from Enkomi that is now synonymous with "CM 0", ENKO Atab 001, and the other inscribed object suspected of being very early, ENKO Apes 001. This choice owes to the fact that both inscriptions stand (or, in the case of ENKO Apes 001, *could* stand) in relative chronological isolation in comparison to the bulk of Cypro-Minoan inscriptions, which belong mostly to the period from the end of the 15th century BCE onwards. It is likely that the paleographical idiosyncrasies of ENKO Atab 001 and Apes 001 reflect their antiquity, while in the case of the former some even consider it might contain a different writing system altogether. For this reason, I think it is advisable to first clarify the paleography of inscriptions dated to 1425-1050 BCE and only afterwards contrast its results with the earlier material. This task is done in Chapter 3. A similar position is adopted with regard to the latest inscriptions, including most Cypro-Geometric documents from Palaepaphos-*Skales*, which most probably are examples of early Cypro-Greek (see 3.3.2.2). The ascription of ATHI Adis 001 and IDAL Avas 002 to Cypro-Minoan is doubtful (see Appendix A) and so they will be treated with caution.

Sections deal with the numbers and punctuation signs, respectively.

2.3.1 Form 02

Form CM 02 is used in only one of the four selected subcorpora, RASH Atab 004. In the clay balls, one possible example has been contemplated in the first sign 01-23-72-85 (ENKO Abou 064), but it is almost certainly a scribal mistake for form CM 01. This is deduced from the repetition of the sequence 01-23-72-85 in two other balls, ENKO Abou 040 and 066 (cf. Table 2.79 in 2.3.18). Apart from RASH Atab 004, CM 02 is attested twice in CM 1 (PSIL Asta 001 and ENKO Avas 007) and once on RASH Mvas 001 (also from Ugarit).

Table 2.12: Secure instances of CM 02.[245]

			—	
PSIL Asta 001	ENKO Avas 007	RASH Atab 004.A.04	RASH Atab 004.A.11	RASH Mvas 001

This scant distribution implies that CM 02 either represents a very rare sign or the allograph of a better attested grapheme. Concerning the second possibility, I limit myself to citing the forms CM1 26 (see 2.3.6) or CM1 34 / CM2 56 as *potential* formal matches (2.3.7).[246] The status of CM 02 thus remains undecided, but see also 3.4.7 for even more indications that it may equate with CM 34/56.

2.3.2 Forms 08, 13 and 78

As shown in Table 2.13, É. Masson included signs CM 08, 13 and 78 in her CM 1, but for CM 2 she established only the existence of CM 08 and 78, and in CM 3 only of CM 13. The modifications introduced in *HoChyMin* changed this picture substantially: CM 08 and 13 appear in all of the three subcorpora, whereas CM 78 is made exclusive to CM 2. Finally, the distribution of *HoChyMin* has been continued in *CMI*.

Table 2.13: Forms CM 08, 13 and 78 in the CM 1-3 repertoires of É. Masson and *HoChyMin*.

	Sign	CM 1	CM 2	CM 3
É. Masson (1974)	08			
	13		—	—
	78			—
HoChyMin (2007)	08			
	13			
	78	—		—

Yet the adjustments in *HoChyMin* went beyond changes in the distribution of the signs in the subcorpora. First, there has been an inversion in the numeration. The sign whose actual form in the inscriptions matches É. Masson's form 13 () now corresponds to, and is transnumerated as, Olivier's CM 08; likewise Masson's CM 08 () is now the

[245] No frontal photograph of the instance in RASH Atab 004.A.11 has been published and so I have not been able to produce a useful drawing.

[246] Terms like "CM1 26" are used in reference to a sign shape that occurs exclusively in a given subcorpus.

shape 13 of *HoChyMin*. Secondly, Olivier's new CM 08 (i.e. 𐄁) was assigned a normalized form (𐄀) that not only differs significantly from the shape drawn by É. Masson and has little to do with the sign's actual paleography, but also resembles closely the standardized shape of his own CM 13 (𐄃).[247] As a result, the normal forms of the two signs are now so similar that the only *diagnostic* trait allowing any distinction is the separation of the two upper horizontal strokes: CM 08 = 𐄀 vs. CM 13 = 𐄃 (cf. Table 2.13).

This rearrangement has inevitably led to great confusion in discerning the two signs. Thus, Del Freo duly notes that CM 08 is erroneously transnumerated as CM 13 in two inscriptions, ENKO Avas 004 and CYPR Mvas 002 (see Appendix A).[248] One may also mention the case of ENKO Abou 022 and 024, two inscribed clay balls: both have the shape 𐄁, but in one case it was transcribed as CM 08 and, in the other, as 13.[249] Recently, Duhoux follows Olivier and blends variants 𐄁 and 𐄃 under CM 08.[250]

Tables 2.14-2.17 offer a paleographical survey of the two forms.

Table 2.14: Secure instances of CM 08 in CM 1.

				
ENKO Abou 005	ENKO Abou 010	ENKO Abou 046	ENKO Abou 053	ENKO Arou 001.04
				
ENKO Arou 001.07	ENKO Arou 001.13	ENKO Arou 001.19	KALA Arou 005.03	PYLA Mlin 001
				
KOUR Psce 001				

Table 2.15: Variation of CM 08 in CM 2.

				
ENKO Atab 002.A.I.40	ENKO Atab 002.B.I.02	ENKO Atab 003.B.17	ENKO Atab 004.A.*lat.sup*.	ENKO Atab 004.B.11

[247] This is particularly visible if one contrasts Olivier's individual CM 1 table with his general grid (*HoChyMin*: 413-414).
[248] Del Freo (2010: 310).
[249] See *HoChyMin*: 76-77.
[250] Duhoux (2013: 42).

Table 2.16: CM 08 in RASH Atab 004.


RASH Atab 004.A.10

Table 2.17: Secure instances of CM 13 in CM 1.

				
ENKO Abou 022	ENKO Abou 024	ENKO Abou 027	ENKO Abou 046	ENKO Abou 063
				
ENKO Abou 065	ENKO Abou 067	ENKO Abou 074	KALA Arou 005.04	ENKO Avas 004
				
CYPR Mvas 002	CYPR Mvas 004	ENKO Mvas 002		

The survey demonstrates that we can isolate two very distinct Cypro-Minoan signs:

CM 08 (): Its diagnostic template consists of *two horizontal strokes on the top of a vertical one*. The two horizontal lines may optionally be separated instead of united by the extension of the vertical stroke. Such variant occurs twice in CM 1 (ENKO Abou 053 and PYLA Mlin 001) and is the one characteristic of CM 2 (see Table 2.15). Another optional feature is the separation of the vertical stroke in two segments (ENKO Abou 005, 010, KOUR Psce 001 and apparently RASH Atab 004.A.10).[251] It must be noted that the examples in ENKO Arou 001.04 and KOUR Psce 001 occur in a repeated sequence, 27-08-110-97-23, thus confirming the equivalence of the shapes. A relevant paleographical observation is that in some instances (ENKO Abou 005, ENKO Arou 001 and KOUR Psce 001) we can see that the vertical stroke was inscribed first.

CM 13 (): It is formed by *one upper horizontal stroke on the top of two oblique ones*. On the lower part of the sign, sometimes the right oblique stroke departs at mid height rather than stemming from the horizontal top, as is the case with the left stroke. Notably, there is no relevant morphological variation of this sign, regardless of the

[251] See already Duhoux (2012: 80–81).

epigraphical support: whether incised on wet clay or engraved in hard metal, its shape changes very little (Table 2.17). Finally, the sign occurs in two sentences that are repeated in more than one document: 102-109-04-13-23 (ENKO Mvas 002 and CYPR Mvas 002) and 15-17-13 (ENKO Abou 024, 027).

In addition, the individualization of these two graphemes is confirmed in ENKO Abou 046, where 𐄷 and 𐄸 coexist. Likewise, KALA Arou 005, albeit being a document of difficult reading, appears to feature both 𐄷 and 𐄸.

A relevant observation ensuing from the above discussion is that CM 08 and 13 are distributed unevenly through the Cypro-Minoan subcorpora: CM 08 is attested in all, but 13 is restricted to CM 1. At this point it is important to introduce a third form in our discussion: this is CM 78, whose secure occurrences are collected in Table 2.18.

Table 2.18: Secure instances of form 78 in CM 2.

				
ENKO Atab 002.A.I.34	ENKO Atab 002.A.I.35	ENKO Atab 002.A.I.41	ENKO Atab 002.A.I.43	ENKO Atab 002.A.II.41
				
ENKO Atab 002.B.I.10	ENKO Atab 002.B.I.13	ENKO Atab 003.A.11	ENKO Atab 003.B.15	ENKO Atab 003.B.26
				
ENKO Atab 004.B.15				

É. Masson includes CM 78 in CM 1 and CM 2, but in *HoChyMin* the sign is limited to the latter. Olivier does give a doubtful instance of CM 78 in CM 1, in ENKO Abou 061 (Doubtful instance of CM 78 in ENKO Abou 061.).

Figure 2.11: Doubtful instance of CM 78 in ENKO Abou 061.

This could easily be a damaged instance of CM 13. Olivier also offers a *single* and *doubtful* instance of his "ghost" CM 08 or 𐄷 (our CM 13) in CM 2, specifically in ENKO Atab 002.A.II.39. This one example is the entire basis for his inclusion of the

sign in CM 2[252] but the reading is far from certain: as explicated in Appendix A, the photograph of Olivier[253] shows only one indisputable stroke and allows for other interpretations.

In conclusion, the paleographical surveys above show that CM 13 is restricted to CM 1 and that form 78 is found only in CM 2. This introduces our second problem: we have two signs with very similar diagnostic features showing complementary distribution in the two largest Cypro-Minoan subcorpora:

CM 13 (): it is formed by *one upper horizontal stroke on the top of two oblique ones*; sometimes the right oblique stroke departs at mid height rather than stemming from the horizontal top, as is the case with the left oblique stroke.

CM 78 (): *one upper horizontal stroke on the top of two practically vertical strokes*.

The most economical explanation is that these are *variants* of a single individual sign whose shape varies slightly in the two Cypro-Minoan subgroups. This is precisely what Nahm proposed more than three decades ago.[254] His proposal did not gain much acceptance in subsequent studies, probably because it was not accompanied by paleographical evidence, but the above survey now provides support for it. Beyond the evidence pertaining to the realm of paleography, it is unfortunate that we do not have examples of identical sign-groups in CM 1 and 2 where 13 and 78 interchange. As is also true of other cases examined here, this is not unexpected for two reasons. First, the number of secure instances of each sign (thirteen and eleven, respectively) is considerably low, meaning that the absence of such cases might be accidental. Second, form 13 occurs in a typologically heterogeneous collection of documents (CM 1), most of them very short, while 78 is restricted to clay tablets containing lengthy texts (CM 2); it is not impossible that the textual contents and therefore the types of words used in the two subcorpora could be of very distinct nature.

As a final note: under the view that CM 13 (CM 1) and 78 (CM 2) represent the same grapheme, the distribution of forms 08, 13 and 78 in the three traditional subcorpora would appear much more balanced (Table 2.19). Notice that the current absence of CM 13/78 from CM 3 may well be accidental, given the small size of this subcorpus.

[252] See *HoChyMin*: 432.
[253] *HoChyMin*: 298.
[254] Nahm (1981: 56, Abb. 3).

Table 2.19: Proposed rearrangement of signs 08 and 13 / 78 in the CM 1-3 subcorpora.

Sign	CM 1	CM 2	CM 3
08			
13 / 78			

In conclusion, I think the existing evidence allows us to maintain this equation as a strong hypothesis—if only one that requires further confirmation.

2.3.3 Form 12b

With only two alleged examples in the clay balls (Table 2.20), form 12b or 12bis is the only sign shape that Olivier added to the inventory of É. Masson in *HoChyMin*. Still, the author is uncertain of its individualism and admits that it might be an allograph of sign 21.[255]

Table 2.20. Instances of CM 12b.

	
ENKO Abou 017	ENKO Abou 026

A more likely alternative is that these are examples of sign 13 (cf. Table 2.17) which by scribal mistake were unfinished and did not receive the third and last stroke (the horizontal one on the upper part). Although it is not impossible, it seems difficult that with only two examples in one subcorpus this might represent an independent grapheme. See also 2.3.21 and Table 2.89.

2.3.4 Forms 15 and 21

Form CM 15 may be described as angular, similar to an open rhombus, and usually made up of four strokes (). As expected, the most angular examples occur on metal, stone and baked pottery.[256] CM 21, on the other hand, is more rounded, resembling an arch, and is made of two or three curved strokes (), although some instances on metal and fired pottery appear simply as an inverted V-shape ().

These are the diagnostic traits that presumably distinguish one sign from the other; yet the criterion is questionable even on paleographical grounds. One instance in

[255] *HoChyMin*: 24.
[256] Already Duhoux (2009a: 11).

KALA Arou 001.06 (see Table 2.21) is obviously curved but, perhaps because É. Masson drew it as angular, Olivier transnumerates it as CM 15. Yet ENKO Abou 034 and 036 have variants of CM 15 more elongated and smoothed, which leads the author to consider the reading not beyond doubt.[257] The instance of 15 in ENKO Abou 024 (again, see Table 2.21) could easily be also confused with 21. Finally, at Ugarit CM 21 has been identified in both RASH Atab 003 and 004 (Table 2.23), but in the latter tablet it could be argued that it resembles more the alleged CM 15 than 21 itself.

Table 2.21: Instances of forms CM 15 (ENKO Abou 024 to ENKO Pblo 001) and CM 21 (ENKO Abou 003 to PYLA Mins 001) in CM 1.

				
ENKO Abou 024	ENKO Abou 024	ENKO Abou 027	ENKO Abou 048	ENKO Abou 051
				
KALA Arou 001.06	ENKO Avas 002	ENKO Mins 001	CYPR Mvas 003	CYPR Mvas 004
				
ENKO Pblo 001	ENKO Abou 034	ENKO Abou 036	ENKO Abou 003	ENKO Abou 016
				
ENKO Arou 001.11	ENKO Arou 001.17	ENKO Arou 001.18	ENKO Arou 001.19	ENKO Arou 001.21
				
ENKO Avas 014	KITI Avas 017	PYLA Mins 001		

Table 2.22: Variation of CM 21 in CM 2.

			
ENKO Atab 002.A.I.35	ENKO Atab 003.A.09	ENKO Atab 004.A.*lat.sup*.	ENKO Atab 004.B.12

[257] *HoChyMin*: 82–83. Olivier remarks: "*015* plutôt que *021*".

Table 2.23: Variation of CM 21 in CM 3.

			
RASH Atab 003.01	RASH Atab 003.05.*lat.dex*.	RASH Atab 004.B.13	RASH Atab 004.B.16

Additionally, the distribution of the two forms is uneven. CM 15 is exclusive to CM 1, where it is relatively rare: thirteen examples, i.e. 0.96% of all syllabograms that compose this subcorpus. Conversely, while CM 21 is a core sign attested in all subcorpora, it occurs only twice in the clay balls, which is where seven out of thirteen instances of CM 15 appear. In other words, their distribution is suspicious, as one gets the impression form CM 15 mostly takes the place of 21 in the clay balls, which in turn squares well with the notion that we are dealing with allographs of the same grapheme.

Table 2.24: Compared positional frequency of forms CM 15 and 21.

Sign (Subcorpus)	Initial	Medial	Final	Isolated	Total	Relative distribution
15 (CM 1)	4	4	1	2	11	Well-distributed
21 (CM 1)	0	2	8	1	11	Never initial, mostly final
15 + 21 (CM 1)	4	6	9	3	22	Well-distributed
21 (CM 2)	13	8	7	0	28	Well-distributed
21 (CM 3)	1	2	0	1	4	(Few examples)

Still concerning distribution, the number of instances of CM 21 in CM 2 represents 1.65% of the syllabograms attested in the subcorpus, but in CM 1 the same sign shape represents only about half of this percentage (0.82%). If, however, the 24 instances of CM 15 and 21 amount to 1.78% of the 1,350 syllabograms of CM 1, which is much closer to the representativeness of CM 21 in CM 2.

Evidence is also encouraging with regard to positional distribution: both forms occur in all kinds of position within a sequence, as well as isolated. The only criterion that so far is not met is the existence of contextually-determined alternations between the two forms. Even so, I consider their equation as one grapheme very compelling.

As a separate note, it must be underlined that the rhombus-like variant is more than a variant to be associated with hard media like metallic items. It appears to be mostly associated with the later phases of Cypro-Minoan: of the two, it is the most recurring form in the balls (LC IIC-IIIB), and it is used also in CYPR Mvas 003 and 004. These two last inscriptions were made on metallic vases typologically comparable to two inscribed vessels from Enkomi (ENKO Mvas 001 and 002) that have been assigned to the LC IIIA and LC II–III, respectively. Two other instances of rhombus-

like 15 belong to inscriptions of very doubtful date, ENKO Mins 001 and ENKO Pblo 001. All evidence taken together, it is possible that this variant is no earlier than the late 13th century BCE. This is to be kept in mind for the comparative analysis in Chapter 3.

2.3.5 Forms 19 and 79

Nahm suggests that CM 19, which occurs in CM 1 and 3, is related to CM 79, found only in CM 2. He adduces support for this claim from the paleographical similarity of the two forms and their preference for the sequence-initial position.[258] Of course, it is also implicit that the two forms are in complementary distribution in the three traditional categories of inscriptions. Nahm's argument is not farfetched, but was not abundant in details and needs to be evaluated.

Form CM 19 is not too frequent but the few existing examples show a wide range of variation (see Table 2.25). Its diagnostic template consists of three zigzagging strokes topped by a horizontal line, but a number of traits are optional. In most instances it contains a horizontal line on its lowest edge, but KITI Avas 019 ( ) and ENKO Avas 006 ( ) (both post-firing signs on ceramic vessels) lack it. The three zigzagging strokes are reduced to two in ENKO Arou 001, where characters are of smaller size. The upper horizontal line becomes oblique in RASH Atab 001, lending the sign an M-like shape. The instances in RASH Atab 004.B.14, ENKO Arou 001, and ENKO Avas 006 are not too distinct from CM 79 (see Table 2.26). The latter has a compressed look like the example of CM 19 in ENKO Arou 001, but lacks the lower horizontal stroke as in ENKO Avas 006 and KITI Avas 019, and combines the upper horizontal stroke and the last of the zigzagging lines in a sort of T-shape like RASH Atab 004.B.14. In light of the variability of CM 19, the degree of dissimilarity between it and CM 79 is not shocking. It can be explained by the writing technique of CM 2: CM 79 ( ) is what we would expect of a more angular and simplified form of CM 19 (,).

Table 2.25: All instances of sign 19 in CM 1 and 3.

				
ENKO Abou 001	ENKO Abou 016	ENKO Arou 001.14	ENKO Arou 001.20	KITI Avas 019
				
ENKO Avas 006	RASH Atab 001.A.04	RASH Atab 001.B.07	RASH Atab 004.B.12	RASH Atab 004.B.14

[258] Nahm (1981: 55-56; Abb. 3). See also Nahm (1984: 167, Abb. 2).

Table 2.26: Examples of sign 79 in each of the four CM 2 tablet fragments.

			
ENKO Atab 002.B.I.11	ENKO Atab 002.B.II.02	ENKO Atab 003.B.15	ENKO Atab 004.A.I.6.01

In terms of positional frequency, apart from the fact that the two forms are distributed complementary in the subcorpora, it is to be noted that CM 19 is not restricted to the initial position as CM 79, but it is still its preferred position. Overall, its distribution is compatible with a V-type syllabogram (Table 2.27).

Table 2.27: Compared positional frequency of forms 19 and 79.

Sign / Subcorpus	Initial	Medial	Final	Isolated	Total	Relative distribution
19 (CM 1)	2	0	2	2	6	Never medial
19 (CM 3)	4	0	0	0	4	Always initial
79 (CM 2)	31	0	0	0	31	Always initial

The only criterion that is not met so far is the existence of contextually-determined alternations of the two forms, but given that there are no more than ten safe examples of CM 19, this is unsurprising.

As a result, here I take forms 19 and 79 to represent the same grapheme.

2.3.6 Forms 26, 61, 62, and 63

Forms CM 61 and 62 are contrasting graphemes in CM 2, but given the fact that they are very similar, it may be useful to discuss their possible allographs in the same section. The main point is to investigate which diagnostic traits distinguish them from each other but also from other signs.

Outside CM 2 form 61 is rare. It is attested four times in the clay balls, three of which in the repeated sign-group 41-61-97. Apart from the balls, in CM 1 it possibly occurs in IDAL Avas 002 (whose reading is problematic and classification as Cypro-Minoan not beyond question), and with more certainty in MAAP Avas 005 and KOUR Avas 004. In this last inscription it is part of the two-sign sequence 110-61, which is most probably the same as 110-63 of KOUR Avas 001 and 002 (cf. also broken]63 in KOUR Avas 003). Except for an additional stroke on its upper right part, form 63 () is identical to 61 (), and moreover is not attested elsewhere. Since form 63 does not occur elsewhere, I think it is hazardous to regard it as an independent grapheme based on these three instances; rather, for the time being, it seems likely that its extra stroke is not a diagnostic feature.

Table 2.28: Distribution of forms 26, 61 and 62 in the different subcorpora.

Form	ENKO Arou 001	ENKO Atab 002-004	RASH Atab 004	ENKO Abou 001-084
26		—	—	—
61	—		—	
62	—		—	—

Form CM 62 is restricted to CM 2, but it is relatively frequent (nineteen secure instances), thus inviting the question: is it really a grapheme exclusive to the ENKO Atab 002-004 tablets or does it have a counterpart in other subcorpora?

CM 61 () and 62 () are distinguished mainly by the separation of the lateral vertical strokes from the "foot" (low horizontal line) in the latter, as well as by the thickness of the inner vertical stroke. The first of these traits is shared by CM 26 (), although in this form the lateral strokes converge to the central vertical one to form a sort of "tripod". So far CM 26 is mostly confined to ENKO Arou 001: it is used four times there, once in the two-sign sequence painted on KITI Avas 002, and possibly once in ENKO Aost 001. Since the cylinder almost certainly does not use the full syllabary in which it is written, we have no way of knowing whether this trait of CM 26 also marked a contrast with other graphemes.

Despite a number of similarities, it would be hazardous at this point to assimilate CM 62 and 26. It is still possible that CM 62 is the CM 2 allograph of sign CM 64 (see discussion in 2.3.13) and it is not clear how the two mergers might be reconciled. Yet another possible scenario is that CM 26 is wholly unrelated to CM 62 and 64, but equates with the rare form CM 02 (see 2.3.1).

2.3.7 Forms 34 and 56

Form CM 56 (Table 2.30) is attested with certainty thirteen times in CM 2, a number that contrasts sharply with its being a hapax in CM 1 and 3. In CM 1 it has been identified solely in KATY Avas 002, but Olivier notes the uniqueness of the sign's form and prefers reading the character in question as the numeral "III".[259] Similarly, the single instance of CM 56 in CM 3 (SYRI Psce 001) might instead be an example of CM 23.[260] As a result, the form is either absent or scarce outside CM 2, allowing for the possibility that it is the allograph of a sign so far considered peculiar to CM 1. Form CM 34 is a suitable candidate for its equivalent, considering their very similar ductus (Table 2.29).

[259] *HoChyMin*: 195.
[260] See the remarks on the inscription in Appendix A.

Table 2.29: Secure instances of sign 34 (CM 1 and 3).

				
ENKO Abou 025	ENKO Abou 027	ENKO Abou 047	KALA Arou 001.04	KALA Arou 001.14

Table 2.30: Paleographical variation of form 56 (CM 2).

			
ENKO Atab 003.A.01	ENKO Atab 003.A.09	ENKO Atab 003.B.24	ENKO Atab 004.B.20

Thus, CM 56 is drawn with a central thin vertical line accompanied by one smaller but thicker stroke on each of its sides. Differently, CM 34 is distinct in that it consists of a central stroke which is usually oblique in addition to two dots, one to its upper right and another to its lower left. However, the central stroke is oriented vertically in ENKO Abou 027 and 047, and a straight line in ENKO Abou 025 and 027 as well as KALA Arou 001.04. Crucially, the instance in ENKO Abou 027 resembles closerly CM 56. Notice also ENKO Abou 047, where the lateral dots of CM 34 are thicker strokes resembling vertical lines.

Unfortunately, both forms are relatively rare (there are five safe attestations of CM 34 and thirteen examples of CM 56) and shed little light on their distribution—even if it is slightly disconcerting that CM 56 is attested sequence-initially five out of thirteen times, whereas CM 34 is never found in this position.

Table 2.31: Compared distribution of forms 34 and 56.

Form / Subcorpus	**Initial**	**Medial**	**Final**	**Isolated**	**Total**
34 (CM 1)	0	3	2	0	5
56 (CM 3)	5	5	3	0	13

Henceforward, the equation of CM1 34 and CM2 56 will be maintained as a working hypothesis. In parallel, it is possible that one of these signs, if not both, is somehow related to the rare form CM 02 (𓏲), namely as a more simplified variant (see Table 2.89 and 3.4.7), but at this point this is a mere conjecture based on an even smaller degree of paleographical similarity.

2.3.8 Forms 10, 30, 37, 41 and 94

Form CM 37 is a well-established sign in Cypro-Minoan, as it is found in the three of the four selected subcorpora that come from Enkomi: the clay balls, ENKO Arou 001 and CM 2 (Table 2.32). The diagnostic features of its ductus are a base-like horizontal stroke, a relatively thin central vertical line (which can optionally be drawn as two strokes), and two consecutive smaller vertical strokes to each side of the central line.

Table 2.32: Secure paleographical variants of CM 37 across subcorpora.

ENKO Abou	**ENKO Arou 001**	**ENKO Atab 002-004**	**Other inscriptions**	
				
ENKO Abou 010	ENKO Arou 001.15	ENKO Atab 003.A.03	RASH Atab 001.A.02	ENKO Avas 012

However, at Ugarit there is a significant discrepancy between CM 37 as used in the tablet RASH Atab 001, which apart from some extra strokes is essentially the one used in the Cypriot subcorpora (see Table 2.32), and the character attested three times in RASH Atab 004 that since É. Masson's analysis has also been interpreted as a possible example of the same sign (see Table 2.33). These three dubious signs are distinct in that their left part does not exhibit the two lateral strokes that are diagnostic of CM 37 elsewhere; moreover, the central line seems to be articulated with the uppermost of the two lateral strokes on its right side (Table 2.33).

Table 2.33: Doubtful examples of CM 37 in RASH Atab 004.

		
RASH Atab 004.A.09	RASH Atab 004.A.09	RASH Atab 004.B.17

Given that its current interpretation of the sign in RASH Atab 004 as 37 seems unlikely, we should explore other options. For this reason and to distinguish it from the well-established CM 37, I will henceforward refer to this form as CM 37b. A conceivable alternative stems from the comparison with CM 41 ( , ), which has been restricted to Cyprus, but now also occurs in the recently-published TIRY Abou 001 from Tiryns. In light of the material available, its diagnostic features seems to be as follows: in its lower part it is sub-triangular and normally three-legged shaped, its three "legs" ending each in a dot or being bottomed by a single horizontal stroke; the upper part consists of a curved or subvertical stroke, which is sometimes a continuation of one of the legs and may optionally be topped by a dot or horizontal stroke (Table 2.34). The repetition of

the sign-sequence 41-41-97 in three different inscriptions (ENKO Arou 001, IDAL Avas 001 and TIRY Abou 001) assures the individuality of CM 41 in six out of eleven secure instances (see 2.3.14). Two examples in ENKO Aost 002 appear more schematic undoubtedly because they were painted in thick strokes.

Table 2.34: Secure instances of form 41 (CM 1 and TIRY Abou 001).

				
ENKO Abou 003	ENKO Abou 016	ENKO Aost 002	ENKO Aost 002	ENKO Arou 001.10
				
ENKO Arou 001.10	IDAL Avas 001	IDAL Avas 001	SALA Psce 001[261]	TIRY Abou 001[262]
				
TIRY Abou 001				

Now CM 37b shares a considerable number of paleographical attributes with sign CM 41,[263] namely with the variants that have the same lower horizontal stroke (ENKO Aos 002 and IDAL Avas 001), as well as one example containing what can be considered a single central vertical stroke (ENKO Arou 001.10).

Table 2.35: Comparison between CM 37b and 41.

CM 37b			**CM 41**	
				
RASH Atab 004.A.09	RASH Atab 004.A.09	RASH Atab 004.B.17	ENKO Arou 001.10	IDAL Avas 001

To sum up, the paleographical and distributional evidence is consistent with the hypothesis that the form in RASH Atab 004 is a variant of CM 41.

[261] Drawing according to O. Masson (1957b: fig. 6); see also *HoChyMin*: 279.
[262] The drawings of the two examples from TIRY Abou 001 are from Vetters (2011: 15, Fig. 3); see also *CMI* II: Addendum.
[263] The same observation has been made by Vetters (2011: 16, fn. 124).

Table 2.36: Distribution of forms CM 10, 30, 37, 37b and 41 in different subsets of inscriptions.

Sign	ENKO Abou 001-084	ENKO Arou 001	ENKO Atab 002-004	RASH Atab 001	RASH Atab 004
10	—	—		—	—
30	—	—		—	—
37					—
37	—	—	—	—	
41			—	—	—

If the merger of CM 37b and 41 is correct, then the grapheme would be no longer exclusive to the clay balls and cylinder from Enkomi, but also a part of the signary used by RASH Atab 004. And if this is so, one might wonder whether an allograph of CM 37b/41 is not present in CM 2 as well. Indeed, there are two sign shapes in CM 2 with more than one trait of their ductus in common in CM 41, forms CM 10 () and 30 ().[264] While CM 10 is peculiar to CM 2 and therefore occurs in absolute complementary distribution with CM 37b/41 (in terms of subcorpora), CM 30 is attested twice in CM 1, namely in two cylinder seals (CYPR? Psce 002 and PYLA Psce 001). Yet this does not prevent a correspondence, since these last two instances are from inscriptions that are not part of the selected homogeneous subcorpora (cf. Table 2.36). CM 10 () shares with 41 the tail-like feature on its upper part, articulated with a central vertical stroke; the lower part is composed of two horizontal lines. Form 30 () lacks the top "tail" that is so characteristic of CM 41, but it is executed with three curve strokes on its lower half, like a tripod. In short, CM 10 and 30 each have a feature that recalls CM 41. A scrutiny of the positional frequency of 10, 30 and 41 offers equally inconclusive evidence. It can be argued that CM 10 is as rare as 41, but all of the forms in question coincide in that they are never attested at the end of sequences. Neither are there any contextually-determined alternations of any of these shapes.

[264] The equation of CM 30 and 41 is tacitly proposed in Nahm (1981: 56, Abb.3).

Table 2.37: Compared positional frequency of forms CM 10, 30, and 41.

Form / Subcorpus	Initial	Medial	Final	Isolated	Total	Relative distribution
10 (CM 2)	1	5	0	0	4	Mostly medial, never final
30 (CM 1)	2?	0	2?	0	2	Unclear
30 (CM 2)	14	12	0	0	26	Never final
41 (CM 1)	3	2	0	0	5	Never final

Hence, the available data is not sufficient to choose between CM2 10 and 30 as a more probable allograph of CM1 37b/41. The three will be kept separated in the signary and analytical chapters.

2.3.9 Forms 39 and 49

The similarity between these two forms was already noted by Meriggi.[265] Unfortunately, in this case the drawings of É. Masson were not sufficiently precise and her publications of the 1970s masked somewhat the resemblance. As Tables 2.38 and 2.39 show, the variant of CM 39 used in ENKO Arou 001 is a close match to CM 49, which so far has been considered peculiar to CM 2. This is far from surprising, as we have seen that the signs in the later clay tablets and cylinder from Enkomi are very small.

Table 2.38: Secure instances of CM 39.

				
ENKO Abou 018	ENKO Abou 052	ENKO Abou 076	ENKO Arou 001.17	KALA Arou 001.03
				
KALA Arou 001.05				

Table 2.39: Secure instances of CM 49.

				
ENKO Atab 003.A.03	ENKO Atab 003.A.04	ENKO Atab 003.A.09	ENKO Atab 003.A.10	ENKO Atab 004.B.13

[265] Meriggi (1972: 256, under shape 23a).

Other types of evidence at least do not contradict paleography: CM 39 and 49 are never attested together in the same inscription and both fail to appear in sequence-final position—even if, given the size of the corpus and the infrequency of the signs, both facts could be the result of chance.

Table 2.40: Compared distribution of CM 39 and 49.

Form	Initial	Medial	Final	Isolated	Total	Relative distribution
39 (CM 1)	3	2	0	2	7	Never final
49 (CM 2)	0	5	0	0	5	Always medial

The evidence does not, of course, confirm the equation, but the latter is at least a very plausible hypothesis. In my opinion, there would be as much reason to reject the merger of these forms as there are grounds to question the unity of, for example, the CM 27 of CM 2 and 3 (𐄪) and CM 27 as it appears in CM 1 (𐄫). Therefore, here these CM 39 and 49 are considered allographs of the same grapheme.

2.3.10 Forms 46 and 47

Since É. Masson distinguished forms CM1 46 and CM2 47, her choice has hardly been questioned. In fact, the distinction has been cited as evidence that CM 1 and CM 2 are different scripts. As we have seen in 2.1, the distinction poses problems. It was mentioned that a sign closely resembling CM 47 appears in a recently-published MARO Avas 003 (MARO Avas 003, cf. Table 2.41), which is an inscribed fragment of a ceramic basin from Maroni-*Vournes*. Thus, the support and the site do not meet the traditional criteria of CM 2. Moreover, one of the signs in CYPR? Psce 008 is reminiscent of both CM2 47 and some instances of 46, such as ENKO Abou 027 (cf. again Table 2.41). Crucially, three instances of form 46, one in ENKO Abou 036 and two in ENKO Arou 001, are practically identical with the variants used in the CM 2 tablets.

Table 2.41: Secure instances of CM 46 (CM 1 and addenda).

				
ENKO Abou 027	ENKO Abou 034	ENKO Abou 035	ENKO Abou 036	ENKO Abou 055
				
ENKO Abou 072	ENKO Abou 073	ENKO Arou 001.07	ENKO Arou 001.21	KALA Arou 001.04
	*N/D*	*N/D*	*N/D*	
KALA Arou 001.05	KALA Arou 001.06	KALA Arou 001.10	KALA Arou 001.11	KALA Arou 001.13
				
KALA Arou 004.02	KITI Avas 001	KALA Ppla 002	MARO Avas 003	CYPR(?) Psce 008[266]

Table 2.42: Paleographical variants of form 47 (CM 2).

			
ENKO Atab 002.B.I.09	ENKO Atab 002.B.I.09	ENKO Atab 003.A.14	ENKO Atab 004.B.20

Paleography thus supports the idea that we are in the presence of the same grapheme. Concerning positional frequency, although there is no rigid pattern of behavior, it can be noted that both CM 46 and 47 are recurrent in sequence-initial position (Table 2.43).

Table 2.43: Compared positional frequency of forms CM 46 and 47.

Form	Initial	Medial	Final	Isolated	Uncertain	Total	Relative distribution
46	8	3	3	2	0	16	Initial half of the time
47	10	10	1	0	3	24	Initial almost half of the time; rarely final

As in other cases, there are so far no examples of contextually-determined alternations of the two forms.[267] In any event, the seems sufficient to maintain the assimilation of the

[266] Drawing according to Daniel (1941: 269–270, fig. 12, no. 10, based on Ward 1910: 353, no. 1212).
[267] Notice, however, 46-17 (ENKO Abou 035) vs. 47-17-97-17 (ENKO Atab 003.A.13) and 46-70-17 (ENKO Abou 073) vs. 47-70 (ENKO Atab 004.B.13).

two forms as a compelling hypothesis. Using the same term of comparison as above, the range of variation CM 46/47 is no wider than that of the well-established CM 27.

2.3.11 Forms 50 and 51

Already É. Masson noticed that these two sign shapes, which she attributed distinctively to CM 1 and CM 2/3, might possibly be connected.[268] Ferrara too hypothesized they are to be assimilated,[269] although in her tentative repertory in *CMI* she keeps them separate.[270]

In reality, the paleographical differences between these two forms are minimal. The central part of both consists of two strokes forming an inverted V-shape, which is accompanied by one vertical or oblique stroke on each side (Table 2.44).

Table 2.44: Comparison of forms CM 50 and 51.

CM 50 **ENKO Abou + ENKO Arou 001**			**CM 51** **CM 2 + RASH Atab 004**	
				
ENKO Abou 002	ENKO Arou 001.26	ENKO Abou 056	RASH Atab 004.A.05	ENKO Atab 003.A.19

Although it is not stated, the rationale of É. Masson for separating the two forms appears to be the different relation between the inner component and the lateral strokes: the two elements are more or less at the same height in 50, but in 51 the lateral strokes are more elevated. The question, as in other cases, is whether this difference is sufficient to be diagnostic of two distinct graphemes.

Positive evidence of another kind exists. The two forms occur in complementary distribution: CM 50 in the clay balls, ENKO Arou 001 and elsewhere in CM 1, as well as in the newly-published TIRY Avas 002 from Tyrins; CM 51 in CM 2, RASH Atab 004 and the remainder of the Syrian documents.

Moreover, their positional frequency is not dissimilar. Form CM 50 is never found sequence-initially in the clay balls and the same is true of CM 51 in CM 2 (Table 2.45). ENKO Arou 001 is not very informative because, though still not initially, it only employs CM 50 once. It is true that CM 51 has a dramatically different behavior in RASH Atab 004, but this fact is not sufficient to minimize the similar distributions of CM 50 and 51 in the remaining subcorpora: first, that the CM 51 of RASH Atab 004 is the same as the 51 in CM 2 has never been questioned; secondly, the form appears ten

[268] É. Masson (1974: 15-16).
[269] *CMI* I: 239. Cf. also *CMI* II: Appendix 2.
[270] *CMI* I: 255.

out of eighteen times initially in the tablet from Ugarit only because the sequence 51-28 is repeated ten times.

Table 2.45: Positional frequency of CM 50 and 51.

Sign (Subcorpus)	Initial	Medial	Final	Isolated	Total	Relative distribution
50 (Clay balls)	0	2	2	2	6	Never initial
50 (ENKO Arou 001)	0	1	0	0	1	Uncertain
51 (CM 2)	0	9	10	0	19	Never initial
51 (RASH Atab 004)	10	3	5	0	18	Well-distributed

All facts taken together, it would not be coherent to maintain the separation of these two very similar (/) and evenly-distributed forms, while accepting the status of single graphemes for other forms in similar situation, such as 87 (/) and 107 (/). I therefore take the two forms to represent the same grapheme, until and unless new evidence can be adduced to disprove this interpretation.

As an additional remark, notice that in the clay balls CM 50 possesses a variant in which the two strokes of central part are drawn not as an inverted V-shape, but more openly, either parallel or as a (non-inverted) V-shape (Table 2.46). It is important to state that, to my knowledge, the identification of these variants has not been doubted, probably because they are similar to the single secure instance of CM 50 in ENKO Arou 001 (Table 2.44).

Table 2.46: Variants of CM 50.

				
ENKO Abou 041	ENKO Abou 041	ENKO Abou 047	ENKO Arou 001.26	KITI Ipla 001.*r*

The second important point is that is slightly similar to form 49 ( ) of CM 2. Yet we have seen that in the balls CM 39 ( ) is likely the CM1 counterpart of 49. Since our limited knowledge of the chronology of Cypro-Minoan inscriptions suggests that the balls are mostly later than the CM 2 tablets (see Chapter 1), we may formulate ―very tentatively― the following hypothesis: if forms CM 39 and 49 indeed represent the same grapheme, then it is possible that the examples of CM 39 seen in the clay balls are the product of slight changes intended to avoid confusion with sign CM 50/51.

2.3.12 Forms 53, 54 and 55

The similarity of forms CM 53, 54 and 55 has been noticed in previous scholarship and, on occasion, even taken as indication that they stand for the same grapheme. For Nahm, CM 54 was the simplified CM 2 equivalent of CM 55, which occurs in the other subcorpora.[271] Ferrara cautiously admits the likelihood of the equation of CM 53 = 54 = 55, but deems more likely the merger of only CM 53 and 54.[272] Davis goes as far as suggesting that all forms from CM 50 through 55 are all derived from from the Linear A "cat face" sign 80/*ma* (), a more far-reaching view that is not followed here (see previous section).[273] In brief, although it is neither demonstrated nor widely accepted, the notion that CM 53, 54 and 55 are to be merged as a single grapheme is not new.

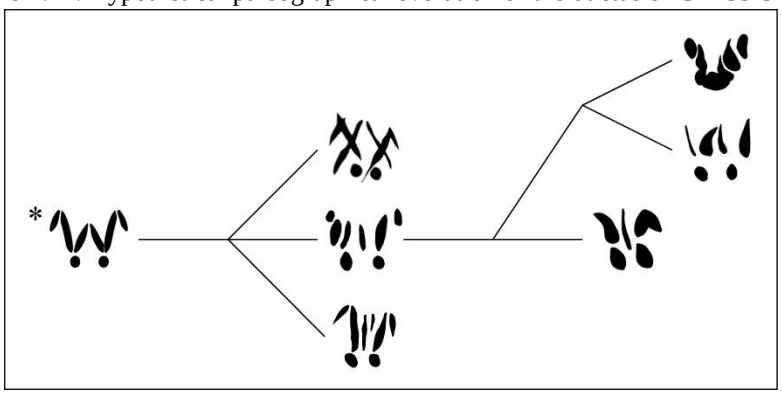
Table 2.47: Comparison of forms CM 53, 54 and 55 in clay media.

CM 53		**CM 54**	**CM 54**	
				
ENKO Abou 012	ENKO Arou 001.03	ENKO Atab 003.A.09	ENKO Abou 003	RASH Atab 004.A.04

In terms of paleography, the merger is quite trouble-free. In principle, there is nothing methodologically wrong with the notion that Cypro-Minoan could have had one grapheme with two variable traits in its ductus: 1) the optional use of two (), one () or no "extra" upper lateral strokes (); 2) the simplification of the two lower dots into a horizontal stroke (), as seen in RASH Atab 004. Under this view, is either the most simplified variant of a sign that was initially more complex, or the original form of a grapheme that was optionally embellished with surplus strokes, as often happened in Linear B. The likeliest hypothesis is the former, since CM 55 () is used already in KALA Mbij 001 and 002, two inscribed gold rings dated to 1425-1360 BCE that are amongst the earliest Cypro-Minoan inscriptions.

[271] Nahm (1984: 166).
[272] *CMI* I: 240. Thus, in her tentative rationalized signary (*ibid*.: 255, Tab. 5.10), she includes only signs CM 53 and 55, reflecting her tentative assimilation of 53 and 54. In Ferrara's view, CM 55 is a CM 3 sign that "cannot be reconciled with the Cypriot repertoires (CM1–CM2)," but nevertheless, as in *HoChyMin*, the sign appears as part of both CM1 and CM3 in her table.
[273] B. Davis (2011: 58, figs. 11 and 14).

Figure 2.12: Hypothetical paleographical evolution of the ductus of CM 53-54-54.



The second piece of evidence is the complementary distribution of the forms, which are never attested together. The clay balls use the CM 53 and CM 55 variants, but never together; ENKO Arou 001 employs exclusively CM 53; form CM 54 is exclusive to CM 2; and RASH Atab 004 has a special variant of CM 55 with a horizontal line instead of the two lower dots, as mentioned above. Each form is frequent enough to reduce significantly the probability of this distribution being accidental.

Table 2.48: Positional frequency of forms CM 53, 54 and 55 (by subcorpus).

Form (Subcorpus)	Initial	Medial	Final	Isolated	Total	Relative distribution
53 (CM 1)	2	4	4	0	10	Well-distributed
53 (CM 3)	0	1	0	0	1	Uncertain
54 (CM 2)	4	11	9	0	24	Well-distributed
55 (CM 1)	2 or 3	2	1 or 2	1	7	Well-distributed
55 (CM 3)	4	4	0	0	8	Never final

Table 2.49: Positional frequency of forms CM 53, 54 and 55 (by form).

Form (Subcorpus)	Initial	Medial	Final	Isolated	Total	Relative distribution
53 (CM 1/3)	2	5	4	0	11	Well-distributed
54 (CM 2)	4	11	9	0	24	Well-distributed
55 (CM 1/3)	6 or 7	6	1 or 2	1	15	Well-distributed

Thirdly, all three forms are well-distributed in terms of positional frequency (see Tables 2.48 and 2.49), and although CM 54 is in general more recurrent (24 attestations vs. eleven instances of form CM 53 and fifteen examples of CM 55), the latter fact can easily be explained by the larger number of attested syllabograms in CM 2.

Finally, there is circumstantial evidence for the contextual alternation of CM 53 and 55. RASH Atab 004, which is widely interpreted as a list of names (see 5.4.2.2), has two sequences with the string -55-09-70, namely 104-09-55-09-70 and 82-58-55-09-70. Possibly, these are two compounded personal names that share second element (see 5.4.2.4 for an argument that this is indeed the case). Now, -55-09-70 is comparable to a part of the sequence 53-09-70-12-23, attested in line 03 of ENKO Arou 001. Lines 02-04 of ENKO Arou 001 contain three consecutive sequences that end with sign -23, namely 82-96-88-23, 53-09-70-12-23 and 27-08-110-97-23 and thus make an enumeration of sorts (see the analysis of this inscription in 2.2.1.2 and 5.6.2.1). It is very likely therefore that the three sign-groups represent words with a similar function. Since 27-08-110-97-23 is also the only text inscribed on a cylinder seal from Kourion (KOUR Psce 001) and because inscriptions on the latter type of objects (considering their function as inferred from archaeological data) are likely to consist of the name or title of their owners (see 5.6.2.3), it is possible that the three sign-groups in ENKO Arou 001 are anthroponyms as well. If 53-09-70-12-23 is a personal name or title, then it would not be surprising if it contained a lexical element shared by 104-09-55-09-70 and 82-58-55-09-70 from Ugarit as well. Thus, the correspondence of 53-09-70- with -55-09-70 seems plausible. The foregoing is a series of mutually dependent hypotheses, hence with a danger of circularity, but they constitute a coherent scenario that would account for a number of facts.

Even admitting that the case for the alternation of CM 53 and 55 is more fragile, all evidence taken together seems sufficient to uphold the equation of CM 53, 54 and 55 as a single Cypro-Minoan grapheme.

2.3.13 Forms 62, 64, 65, 67, 99, 100 and 110

In *HoChyMin*, Olivier merges É. Masson's CM 64 (𐄳), exclusive to CM 1, and 65 (𐄴), peculiar to CM 2, as a monolithic CM 64 (see Figure 1.4), but the merger is problematic. The positional frequency of the two forms in the two sets of documents not only is not analogous, it is antagonistic: CM 64 is *never final* whereas CM 65 is *never initial* (see Table 2.51). If for the sake of argument we consider paleographical resemblance not in isolation, but in combination with positional frequency, we see that there are alternatives to the merger put forwards in *HoChyMin*. If consider the possibility that CM2 65, which is relatively frequent but never initial, corresponds instead to a form that behaves similarly, but is somewhat distinct paleographical, in the other subcorpora, other signs emerge as possible allographs.[274]

First, we have CM 67 (𐄵). The sign is attested with certainty in only three occasions, all in clay balls from Enkomi, but quite possibly occurs also in three other CM 1 inscriptions (MYRT Avas 002, CYPR Mvas 001 and CYPR? Psce 004). In terms

[274] Notice that Steele (2013: 29) does not question the identity of Olivier's merged CM 64, but notes: "Variant 064C 𐄴 is considerably different from the other forms of this sign and appears only in CM2".

of ductus, it is distinct from CM 64 only by one trait: it possesses two lower horizontal lines instead of one. Yet as regards positional frequency it never occurs initially, like CM 65 (Table 2.51).

In turn, the fact that CM 67 is attested few times indicates that it is either a rare sign or the allograph of a more widely attested one. If it is the latter case, then a plausible match is CM 99 (). Except for the fact that the two horizontal lines on its lower part are separated by a vertical stroke, thus shaping a "foot", both are formally very similar. CM 99 is used in five clay balls (though never alongside form CM 67), ENKO Arou 001, other CM 1 inscriptions and tablet RASH Atab 001. In RASH Atab 004 we do not find shapes CM 67 and CM 99; instead, the tablet features CM 100 (), which is identical to CM 99 (), except for two additional oblique strokes in its upper part, like "arms". Against the assimilation of CM 99 and 100 one might argue that the addition of the two strokes featured by the latter is unexpected, as there would be no practical motivation for the complexification of the sign. However, we have seen that the addition of non-essential traits is common in Linear B (see also 2.3.15 for the possibility that CM 69 and 71 behave similarly). Thus, CM 100 could be the allograph of CM 99 in RASH Atab 004. Notice that it is also in this tablet that we find a peculiar variant of CM 55, whereby the two lower dots become a single horizontal stroke (see previous section).

Table 2.50: Distribution of forms CM 62, 64, 65, 67, 99 and 100.

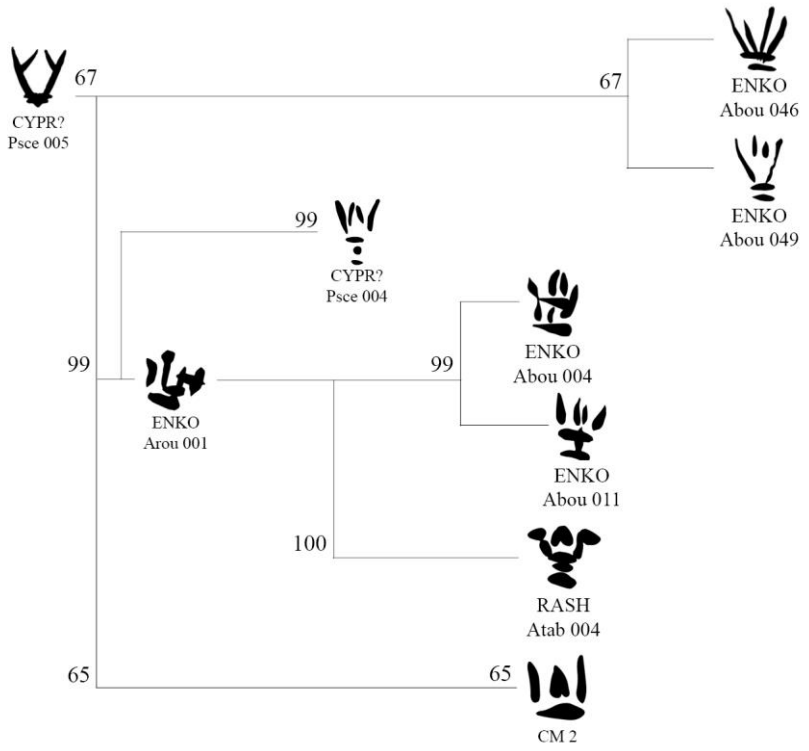
Form	ENKO Abou 001-084	ENKO Arou 001	ENKO Atab 002-004	RASH Atab 004
62	—	—		—
64		—	—	—
65	—	—		—
67		—	—	—
99			—	—
100	—	—	—	

Table 2.51: Positional frequency of forms 62, 64, 65, 67, 99 and 100.

Form	Initial	Medial	Final	Isolated	Total	Relative distribution
62	11	5	4	0	20	Often initial
64	5	1	0	1	6	Never final
65	**0**	8	**8**	0	**16**	**Never initial**
67	**0**	1	2	0	3	**Never initial**
99	2	5	3	0	**10**	Mostly medial
100	**0**	3	**9**	0	**12**	**Never initial**

Granted that the available evidence allows us to *hypothesize* the equation of CM 67, 99 and 100 as variants of the same sign, would this scenario align well with the possible match between CM 65 and 67? CM 67 is probably very early, as it seems to be attested as  in a 1400-1325 BCE cylinder seal (CYPR? Psce 005), although it is likewise employed in the later clay balls. In theory, it could be the paleographical source of both CM 65 () and 99 (), especially since the latter occurs one as  in a seal dated to 1325-1225 BCE (CYPR? Psce 004). In this case, CM 65 () would reflect be a simplification of 67 () resulting from the omission of the "leg" and "foot" that characterize the latter (see Figure 2.13). In favor of this notion are other cases of the simplification in CM 2 of "feet" otherwise typical of CM1 (cf. the variation of signs CM 70, 87, 88/89/90 and 92).

Figure 2.13: Hypothetical paleographical evolution of forms CM 65, 67, 99 and 100 as one grapheme.



To sum up, the following hypothesis are contemplated here:

- CM 64 (only attested at Cyprus) and CM 65 (only in ENKO Abou 002-004) are different graphemes;
- CM 65 is a variant of CM 67 (a rare form attested in cylinder seals, clay balls and possibly a metal bowl):
- Form CM 99 (Cyprus and Ugarit, but not CM 2) is a variant of CM 67;
- CM 100 (only in RASH Atab 004) is a variant of CM 99.

If all these hypothesis are correct, then CM 64 (never final) represents one grapheme and CM 65/67/99/100 (mostly medial and final) represent another.[275]

If CM 65 is not the counterpart to CM 64 in CM 2, is it possible that another form is? The only sign in ENKO Atab 002-004 that is similar in ductus and positional frequency to CM 64 is CM 62 (), which is mostly sequence-initial. Furthermore, CM 62 offers the advantage of being restricted to CM 2, thus—at least at present—it is in complementary distribution with CM 64 (see Table 2.52).

[275] For the idea that CM 65 and CM 99 are related, see already Nahm (1984: 165).

Table 2.52: Distribution of forms CM 62, 64, 65, 67, 99 and 100 in the selected subcorpora.

Sign	ENKO Abou 001-084	ENKO Arou 001	ENKO Atab 002-004	RASH Atab 004
62	—	—		—
64		—	—	—
65 (66)	—	—		—
67/99/100			—	

The main obstacle for the equation is paleographic: CM 64 displays two relatively short parallel vertical strokes in its central part, whereas CM 62 employs a somewhat long and single vertical stroke in the same position. If CM 54 corresponds to CM 53 and 55, then this would constitute yet another case of such simplification. Nevertheless, caution as regards the equation of CM 62 and 64 is recommendable.

2.3.14 Forms 68 and 97

In CM 2, the existence of CM 68 as a grapheme independent from CM 75, 95, and 97 is well-established (see Table 2.3).

Table 2.53: Form 68 in CM 2.

			
ENKO Atab 002.B.I.12	ENKO Atab 003.A.15	ENKO Atab 004.A.*lat.sup*.	ENKO Atab 004.B.17

However, there is strong evidence that the form that has been identified as CM 68 in CM 1 is not actually a counterpart to the CM 2 sign. Table 2.54 shows the five examples of CM 68 in CM 1 taken as certain in *HoChyMin*.

Table 2.54: Secure instances of form 68 in CM 1. [276]

Inscription	Sequence (as in *HoChyMin*)	Form
ENKO Abou 043	110-**68**-107-09-27	
ENKO Abou 049	102-**68**-110-67	
IDAL Avas 001	41-41-**68**	
MARO Avas 001	44-27-**68**-23	
CYPR? Psce 002	**68**-12	

Clearly there is little difference between these forms and one of the variants of CM 97 in the much-repeated sign-sequence 102-73-04-97, namely in the instance in ENKO Abou 069 (Table 2.55).

Table 2.55: Paleographical variation of CM 97 in instances of sign-sequence 102-87-104-97.

Inscription	Sequence (Reading in *HoChyMin*)	Form
ENKO Abou 042	102-87-<u>104</u>-**97**	
ENKO Abou 052	102-87-107-**97**	
ENKO Abou 069	102-87-104-**97**	
HALA Abou 001	102-87-107-**97**	
ENKO Abou 084	102-87-107-**97**	 [277]

In turn, the H-like structure of CM 97 in ENKO Abou 069 approximates it to the supposed examples of CM 68 in 110-68-107-09-27 (ENKO Abou 043) and 102-68-110-67 (ENKO Abou 049), as shown in Table 2.56.

[276] The drawing of the sign in CYPR? Psce 002 is from Collon (1986), according to the corrected version in Olivier (*HoChyMin*: 267).
[277] According to É. Masson (1978b: 808, Tab. 1.g).

Table 2.56: Comparison between the alleged instances of CM 68 in ENKO Abou 043 and 049, and the variant of CM 97 in ENKO Abou 069.

Inscription	Sequence (Reading of *HoChyMin*)	Form
ENKO Abou 043	110-**68**-107-09-27	
ENKO Abou 049	102-**68**-110-67	
ENKO Abou 069	102-87-104-**97**	

It is therefore advisable to correct the reading of CM 68 to 97 on these two clay balls. The case of the much-repeated sequence 102-87-104-97 is not the single piece of evidence for this assimilation. Another supposed instance of CM 68 that ought to be corrected is the one in the inscription of IDAL Avas 001, which Olivier transnumerates as 41-41-68.[278] The sequence is identical with 41-41-97, attested in the Enkomi cylinder and as well as in the new inscription TIRY Abou 001, from Tiryns (see Table 2.57).

Table 2.57: Comparison between sign-sequences 41-41-68 and 44-41-97.

Inscription	Sequence (Reading in *HoChyMin*)	Sign
ENKO Arou 001.10-11	41-41-**97**	
IDAL Avas 001	41-41-**68**	
TIRY Abou 001	41-41-**97**	

The third and final piece of evidence, albeit more circumstantial, is the position of the alleged CM 68 in 44-27-68-23 (MARO Avas 001), which compares well with the distribution of CM 97, as there are are four examples of final -97-23 in CM 1:

27-13-110-97-23 (ENKO Arou 001.04-05 and KOUR Psce 001)
102-73-04-97-23 (KITI Ipla 001.v)
102-82-85-88-97-23 (ENKO Avas 005)[279]

As a result, the assimilation of most of the purported examples of CM 68 in CM 1 to CM 97 is secure and only the character in the cylinder seal CYPR? Psce 002 () seems like a genuine example of CM 68. Otherwise, CM 68 is mostly restricted to CM 2.

[278] See already Ferrara (*CMI* II: 64).
[279] The reading given in *HoChyMin* is 102-82-69-88-97-23. For the reading accepted here, see 2.3.18 in this chapter and Appendix A.

2.3.15 Forms 69, 71 and 72

The uneven distribution of shapes 69 (), 71 () and 72 () in the selected subcorpora (Table 2.58) requires some scrutiny. The well-attested and well-distributed CM 70 () can be excluded from this discussion: not only is it attested in all the selected subcorpora, it is also found to coexist with forms CM 69 and 72 in CM 2, and with form CM 71 in CM 3. Its separate entity is therefore solidly grounded.

Table 2.58: Distribution of forms CM 69, 71 and 72 in the selected subcorpora.

ENKO Abou 001-084	**ENKO Arou 001**	**ENKO Atab 002-004**	**RASH Atab 004**
69 ( )		69 ( )	71 ()
or	Only 69 ( )	and	and
72 (,)		72 ()	69 ()

There is no reason to doubt that the forms transnumerated as CM 69 in the clay balls, ENKO Arou 001, CM 2 and other CM 1 inscriptions (see Tables 2.59 and 2.60) all represent the same grapheme.

Table 2.59: Paleographical variation of CM 69 in CM 1.

ENKO Abou 032	ENKO Arou 001.01	ATHI Avas 001[280]	CYPR Mvas 003	PARA Psce 001

Table 2.60: Paleographical variation of CM 69 in CM 2.

ENKO Atab 002.A.I.28	ENKO Atab 003.A.07	ENKO Atab 004.B.05

It is also worthwhile comparing the following four sign-sequences from different CM 1 and CM 2 documents:

38-87-103-23-**69-23** (ENKO Arou 001.01)
107-11-24-107-27-**69-23** (ENKO Arou 001.12-13)

[280] Drawing from Dothan and Ben-Tor (1983: 122, fig. 55:1, apud *HoChyMin*: 173).

38-87-87-04-09-**69-23** (ATHI Avas 001)
21-09-**69-23** (ENKO Atab 003.B.19)

All contain the string -69-23 in final position and two have even -09-69-23. This adds distributional evidence to paleography in support of the identity of the sign.

Unlike CM 69, however, CM 72 is unevenly distributed in the different subcorpora (Table 2.63).

Table 2.61: Paleographical variation of CM 72 in CM 1.

				
ENKO Abou 022	ENKO Abou 040	ENKO Abou 046	ENKO Abou 057	ENKO Abou 064
				
ENKO Abou 065	ENKO Abou 066	ENKO Abou 067	KALA Arou 001.12	PSIL Asta 001
				
KATY Avas 003	KITI Avas 011	KITI Ipla 001.*r*[281]	ENKO Mins 001	CYPR Mvas 001

Table 2.62: Form 72 in CM 2 (ENKO Atab 003).


ENKO Atab 003.A.11

The form is rare in CM 2, where it is attested only four times and only in tablet ENKO Atab 003.[282] Yet in the whole subcorpus of CM 1, which in total contains less signs than CM 2, we have eighteen safe attestations of 72 (Table 2.63).

[281] Drawing by É. RASH , Pl. A, B: 1) corrected by Olivier (*HoChyMin*: 235).
[282] *Pace* Olivier, the published photograph of the sequence 107-33-72-27 in ENKO Atab 002.B.I.03 indicates that the sign in question looks rather like CM 70 (see Appendix A). In addition, one possible instance of CM 72 in ENKO Atab 002.A.II.39 is badly damaged and so its reading is highly doubtful, as acknowledged in *HoChyMin*.

Table 2.63: Frequency of forms CM 69, 71, and 72 (by subcorpora).

Form	Subcorpora	Attestations
69	Clay balls, ENKO Arou 001, and other CM 1	11
72	Clay balls and other CM 1	18
69	CM 2	21
72	CM 2	4
71	RASH Atab 004 and other CM 3	12

With the exception of shape 72, all CM 1/2 signs that have a similarly low frequency in CM 2 are equally infrequent in CM 1:

Table 2.64: Frequency of CM 1/2 sign forms with three to five attestations in CM 2.

Form	CM 2 attestations	CM 1 attestations
01	3	5 (7)
36	3	5
72	4	**18**
11	5	4

This incoherent distribution might have linguistic causes: perhaps sign CM 72 represents a syllable which is rare in the language of CM 2 but more common in the one of CM 1, if indeed they represent different languages. However, there are some patterns in the positional distribution of CM 69 and 72 that further increase suspiciousness about the equivalence of CM2 72 and CM1 72. Thus, when CM 69 is preceded by any sign in CM 1, 22.2% of the time that sign is 09; and when it is preceded by any sign in CM 2, 23.8% of the time that sign is also 09. CM 72 follows the same pattern in CM 1, and thus when it is preceded by another syllabogram, 22.2% of the time that syllabogram is 09; however, in none of its four instances in CM 2 is CM 72 preceded by CM 09 (see Table 2.65).

Table 2.65: Instances in which CM 69, 71 and 72 are preceded by CM 09.

String	Subcorpora	Percentage (secure instances)
(-)09-69(-)	Clay balls, ENKO Arou 001, and other CM 1	2 out of 9 (22.2%)
(-)09-72(-)	Clay balls and other CM 1	4 out of 18 (22.2%)
(-)09-69(-)	CM 2	5 out of 21 (23.8%)
(-)09-72(-)	CM 2	0 out of 4 (0 %)
(-)09-71(-)	RASH Atab 004 and other CM 3	1 out of 12 (8.3%)

This pattern is repeated with sign CM 23. In CM 1 the latter precedes CM 69 33.3% of the time, and in CM 2 the percentage is 4.8%. Again, CM 72 follows the tendency: 27.7% of the times CM1 72 is preceded by a sign the syllabogram we find is 23, but with CM2 72 this never occurs (Table 2.66).

Table 2.66: Instances in which CM 69, 71 and 72 are preceded by CM 23.

String	Subcorpora	Percentage (secure instances)
(-)23-69(-)	Clay balls, ENKO Arou 001, and other CM 1	2 out of 9 (22.2%)
(-)23-72(-)	Clay balls and other CM 1	5 out of 18 (27.7%)
(-)23-69(-)	CM 2	1 out of 21 (4.8%)
(-)23-72(-)	CM 2	0 out of 4 (0 %)
(-)23-71(-)	RASH Atab 004 and other CM 3	0 out of 12 (0 %)

In conclusion, CM1 72 is relatively frequent, just like CM 1/2 69, and interacts with signs 09 and 23 in similar ways. Conversely, CM2 72 is fairly rare and never preceded by 09 and 23.

The hypothesis advanced here is that there is a correspondence between CM 69, as attested in all subcorpora, and the form CM 72 as it appears in CM 1. In other words, CM1 72 is a more complex variant of CM 69. Conversely, CM2 72 would be an independent grapheme. Henceforward I will be referring to these two hypothetically-separate signs as CM 69/72 and 72b, respectively. A similar hypothesis has already been advanced by Nahm.[283]

[283] Nahm (1981: 57). However, part of the author's argument hangs on the presupposition that CM1 69/72 + CM2 69 is a sign with the phonetic value *ja* and is moreover often preceded by syllabograms which beforehand he reads with C*i* values. Differently, the case here is that there is internal evidence to support the individualization of two signs independently from their phonetic values.

We now need to address the problematic CM 71, which is restricted to the clay tablet RASH Atab 004 from Ugarit and the cylinder seal SYRI Psce 001 (most probably from the same Syrian coastal city[284]).

The presumable instance of CM 69 in RASH Atab 004 cannot clarify the issue on its own because it is isolated. For example, we should not preclude that the character is a poorly-executed CM 70 or CM 71, i.e., that CM 69 is not present in this text at all. It should be noticed that one of the instances of CM 71 (line A.05 of RASH Atab 004 as shown in Table 2.67) does not seem to show the two extra lateral strokes that characterize this sign; instead, its right side shows two overlapping strokes.

Table 2.67: Form CM 71 and possible form CM 69 in CM 3.

CM 71			**CM 69(?)**
			
RASH Atab 004.A.05	RASH Atab 004.A.06	SYRI Psce 001	RASH Atab 004.B.17

The fact remains that where ENKO Arou 001 and CM 2 have a very frequent CM 69, RASH Atab 004 presents a somewhat recurrent CM 71. In terms of distribution, this could be circumstantial evidence that they are allographs of the same grapheme. The problem lies in the paleographical side of the question. Form 71 possesses two additional lateral strokes that are not easily explained. There are three scenarios to explain this situation:

(1.A) CM 69 and 71 are *different graphemes*: CM 71 is a very rare sign, perhaps absent from Cypriot inscriptions not because it was an innovation at Ugarit, but by accidents of preservation.

(1.B) CM 69 and 71 are *different graphemes*: CM 71 is really absent from Cyprus because it is an innovation of the signary of RASH Atab 004, whereas CM 69 is absent from RASH Atab 004.

(2) CM 69 and 71 are *the same grapheme* and the latter is a paleographical variant of the former.

Scenarios (1.A) and (2) are consistent with the hypothesis that Cypro-Minoan represents only one writing system script, while scenario (1.B) implies at least some degree of reforming at Ugarit, perhaps even a different writing system. Yet the three possibilities face problems. Scenario (1.A) makes sense only if CM 71 represented a “special” sound

[284] *HoChyMin*: 409, fn. 1.

that was uncommon in the Cypro-Minoan inscriptions from Cyprus, but frequent in RASH Atab 004. This difference might owe to the use of different vocabulary (and subject matters) in the inscriptions of both regions or to the use of different languages in RASH Atab 004 and the Cypriot texts. In the latter scenario Cypro-Minoan would have been adapted to a new language at Ugarit, leading to modifications in the system, as conjectured by É. Masson and Olivier. Yet we have seen that even the inscriptions from Ugarit show discrepancies, so this would strictly apply to the script used in RASH Atab 004 and perhaps SYRI Psce 004. Scenario (1.B) might lead to the same problem. The problem with scenario (2) is of another nature. If CM 71 is simply a paleographical development of sign CM 69, why add two lateral strokes to it?

Perhaps we should rather stress that the creation of new signs, even if they are meant to represent special "foreign" sounds, is not necessarily synonymous with the creation of a new script.

A hypothesis could be entertained that the lateral strokes were added to CM 69 (𐄩) in order to make it more easily distinguishable from 70 (𐄪), but then one can ask why do we not see this in Cypriot inscriptions as well. We have seen that non-essential strokes are a common phenomenon in Linear B, although such an "embellishment" makes less sense in RASH Atab 004, whose signs share with CM 2 a tendency for angularization and reduction, not the contrary. Still, it is interesting to compare CM 69 (𐄩) ~ 71 (𐄫) with CM 99 (𐄯) ~ 100 (𐄰), both possible pairs of allographs with two extra lateral strokes as an optional feature. For the relation between form CM 100, also peculiar to RASH Atab 004, and CM 99, see 2.3.13.

As a result of the foregoing discussion, in the coming chapters I will consider the (admittedly tentative) hypothesis that CM 69 and 71 are allographs of the same sign.

2.3.16 Forms 73, 75 and 76

Originally É. Masson distinguished a form CM 77 (𐄭 / 𐄮), allegedly attested in ENKO Abou 012, 013 and 023 (Table 2.68). Although form 73 (𐄬 / 𐄱) is also quadrangular or sub-quadrangular (Table 2.69), Masson kept CM 77 distinct because the square that makes its "frame" is divided by lines in four spaces, not six. This was presumably the diagnostic feature. However, Olivier considers form CM 77 to be a variant of 75 (𐄵) and merges the two in *HoChyMin*. Thus, 𐄭 is now offered as the CM 1 variant of 𐄵 (cf. Figure 1.4). Presumably, this owes to sign CM 75 being a very frequent sign used in all subcorpora (CM 1, 2 and 3): as form 𐄶 is not attested in the clay balls, it is *assumed* that it must have occurred there in a slightly modified shape.

Table 2.68: Signs formerly classified as CM 77 and currently interpreted as variants of CM 75.

			
ENKO Abou 012	ENKO Abou 013	ENKO Abou 023	ENKO Abou 023

Table 2.69: Secure instances of form CM 73 in CM 1 and 3.

				
ENKO Abou 018	ENKO Abou 021	ENKO Abou 037	ENKO Abou 045	ENKO Abou 073
				
ENKO Arou 001.02	ENKO Arou 001.14	ENKO Arou 001.20	KALA Arou 001.13	ALAS Avas 002
	*N/A*		*N/A*	
KITI Ipla 001.*v*	RASH Atab 004.B.12	RASH Atab 004.B.14	RASH Atab 004.B.18	

Yet Olivier's reclassification is problematic. In ENKO Arou 001, CM 2 and RASH Atab 004, CM 75 is *always* drawn as  and "contrasts" with either CM 73 ( / ) or CM 76 (). Conversely, we never find a "grid-like" used simultaneously with the latter signs.

Thus, a case can be made that and  are allographs of CM 73. The latter is not always drawn as a grid with six "slots": rather, the variant used in ENKO Arou 001 () is reflects a quadrangular shape divided in four (see Table 2.69). Moreover, the ductus of in ENKO Abou 013 is comparable to the instance of CM 73 in RASH Atab 004.B.14 (cf. Tables 2.68 and 2.69). In addition: regardless of the high frequency of CM 75, the sign might simply not be attested as yet in the clay balls. As a result, here I take the instances formerly gathered under CM 77 not as a variant of CM 75, but as an allograph of CM 73.

It was mentioned above that CM 75 coexists with either CM 73 or 76 in ENKO Arou 001, CM2 and RASH Atab 004. In fact, while CM 73 is attested in Cypriot and Syrian inscriptions categorized as CM 1 or CM 3, form CM 76 is peculiar to CM 2. Therefore, they are in complementary distribution. Starting with É. Masson, CM 76 has been considered an innovation of the CM 2 "subscript". The tacit implication is that, when CM 2 allegedly developed out of CM 1, the adaptation meant simultaneously the creation of CM 76 and the discarding of CM 73.

Table 2.70: Paleographical variation of CM 76 in CM 2.

		
ENKO Atab 002.B.I.09	ENKO Atab 003.A.15	ENKO Atab 004.B.15

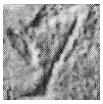
If, however, the signary of CM 2 was not a radically modified system, but only a slightly different version of the script used in other inscriptions, it would make more sense to stress the complementary distribution of CM 73 and 76 in terms of. That is, CM 76 might simply be the CM 2 version of CM 73. We have seen that signs tend to be compacted and schematized in the tablets that make up this subcorpus. Table 2.69 attests to a wide range of paleographical variation of CM 73, with subquadrangular forms divided in between three to nine parts. It does not seem farfetched to think that in CM 2 the sign in question could have been further simplified, yielding the two-square form CM 76.

While I consider this hypothesis one to be borne in mind and tested further, in this thesis I will keep CM 73 and 76 separated in the sign grids (see 2.3.24).

2.3.17 Forms 86 and 112

CM 86 is among the rarest forms of Cypro-Minoan. It is attested twice in clay balls and five in KALA Arou 001, although, as is visible in Table 2.71, in the case of the latter inscriptions the signs are very difficult to assess due to the state of preservation of the object.

Table 2.71: Instances of CM 86 according to *HoChyMin*.[285]

				
ENKO Abou 029	KITI Abou 001	KALA Arou 001.07	KALA Arou 001.09	KALA Arou 001.10
				
KALA Arou 001.11	KALA Arou 001.12	KALA Arou 001.14	IDAL Avas 002.01	

In terms of ductus, the sign is drawn with three basic elements: (1) a lower horizontal stroke; (2) two lateral oblique strokes forming a V-shape; (3) three inner oblique strokes that can be simplified to dots. The two examples in the balls seem to show the same type of variation seen with CM 87, 88/89/90 and 92, i.e. the V structure can become a

[285] For some of the examples from KALA Arou 001 I provide only the photographs given in *HoChyMin*, as the condition of the signs makes it difficult to produce drawings based just on these.

more angular 𐄁. Moreover, if the examples of KALA Arou 001 do represent the same grapheme, then it appears that it can also develop a "leg". Finally, depending on whether the inscription IDAL Avas 002 is written in Cypro-Minoan or Cypro-Greek (see discussion in Appendix A), it might contain an eighth example of the sign.

What needs to be highlighted is that the example of CM 86 in KITI Abou 001 (dated to the LC IIIA) is somewhat reminiscent of CM 112 as seen in ENKO Mvas 002 (LC II-III). As shown in Table 2.72, CM 112 is usually drawn as an H-like shape whose upper part contains four inner oblique strokes or dots, reminiscent of the three of CM 86. Like other signs on the balls (e.g. CM 97 and 107), the H-shape tends towards becoming X-like. This process is complete in the painted variant of ENKO Aost 002 (𐄤). Now the example in ENKO Mvas 002 is rather simplified (even though it is made on metal, not written on clay or painted), as it displays only two inner strokes, and very short lower strokes (𐄣). One might therefore wonder whether CM 86 as seen on the balls might represent allographs of CM 112. At the same time, if IDAL Avas 002 were still Cypro-Minoan, then its instance of CM 86 would contain four inner strokes like CM 112.

Table 2.72: Instances of CM 112 according to *HoChyMin*.[286]

				
ENKO Abou 039	ENKO Abou 042	ENKO Abou 043	ENKO Abou 066	ENKO Abou 079
				
ENKO Abou 079	ENKO Aost 002.02	KALA Arou 001.10	KITI Avas 013	ENKO Mvas 002

Given the difficulties in reading and assessing KALA Arou 001 (see 2.2.1.5), the status of CM 86 cannot be settled. However, if it is true that the form coexists with CM 112 in this inscription, then at least those instances must represent an independent grapheme, even if the characters in ENKO Abou 029 and KITI Abou 001 are variants of CM 112. As the sign is very rare, at best being attested in only one of the four selected subcorpora, it is not impossible that it is an allograph of well-attested grapheme. For the purposes of this thesis, I will continue to list CM 86 separately.

2.3.18 Forms 85, 95, 96 and 114

[286] For ENKO Abou 079 and KALA Arou 001.10 I provide only the photographs given in *HoChyMin*, as the condition of the signs makes it difficult to produce drawings based just on these.

The issues concerning the paleographical distinction between CM 95 and 96 have already been addressed by Duhoux.[287] He starts with the problem that *HoChyMin* provides two alternative readings for the sequence in ENKO Arou 001 (lines 02, 09 and 26): 82-96-88-23 and 82-95-88-23. Olivier reads 82-96-88-23 in the edition of ENKO Arou 001, but in the commentary to KITI Iins 001 transliterates the same sequence as 82-95-88-23.[288] The author's hesitation is probably due to the similarity between 82-96-88-23 and 82-95-88 (ENKO Abou 031) / 82-95-88 (KITI Iins 001.02) (see Table 2.73).

Table 2.73: Similar sign-sequences in ENKO Abou 031, KITI Iins 001 and ENKO Arou 001.

Inscription	**Sequence (Reading in *HoChyMin*)**	**Form in question**
ENKO Abou 031	82-**95**-88	
KITI Iins 001.02	82-**95**-88	 [289]
ENKO Arou 001.02, 09, 26	82-**96**-88-23(-)	

Duhoux's approach focuses on the formal analysis of the secure instances of CM 95 and 96 in CM 1, which in his opinion amount to one and eight, respectively, with the goal of determining the "main differences" between the two signs. Notice that his one certain example of CM 95 in CM 1 is precisely that of ENKO Abou 031 (). His conclusions can be summarized as follows:

1) The upper part of CM 96 has *six or seven* strokes, while the upper part of 95 has *four*.
2) The lower part of CM 96 has *one or two* strokes, while the lower part of 95 has *one*.
3) Optionally, CM 96 may have a vertical line dividing its upper part in two (cf.  in ENKO Abou 012).
4) The upper left part of CM 96 (in all cases) has two vertical strokes, but the superior right part of the same sign has only one vertical stroke in the examples of ENKO Arou 001 (cf. e.g. ); in comparison, CM 95 presents only one vertical stroke on both sides ().

Duhoux concludes that the reading 82-96-88-23 is correct and a full survey of the paleographical range of CM 96 confirms his view. Yet from this appraisal arises another issue that is not addressed by the author. Is the sequence 82-95-88 in ENKO Abou 031 and KITI Iins 001.02 correctly read, or should it rather be transliterated 82-96-88? This question originates in the well-established fact that sign CM 23 is

[287] Duhoux (2013: 42-44).
[288] Contrast *HoChyMin*: 123, 126, 132 and 231.
[289] Drawing according to É. Masson (1985: 281, Pl. A, B:2, apud *HoChyMin*: 231).

occasionally added to self-standing sequences in what appears to be a case of inflectional activity: cf. e.g. 102-73-04-97 in ENKO Abou 045 vs. 102-73-04-97-23 in KITI Ipla 001.*v*. The notion that 82-96-88-23 might be an inflected form of *82-96-88 is also supported by the co-occurrence of the former with 53-09-70-12-23 and 27-08-110-97-23 in ENKO Arou 001: the use of -23 in sequence-final position in three successive sign-groups suggests it has an inflectional function and thus is not part of the "nucleus".[290]

A priori there are potential obstacles. The presumable CM 95 in KITI Iins 001.02 is damaged ( ) and could have been misread, while the sign in ENKO Abou 031 ( ) appears closer to CM 95 than CM 96. The reasons have to do with Duhoux's paleographical assessment, in which (with four strokes, not six or seven) is assumed to be a correct CM 95. Thus, it ought to reflect the diagnostic features of this grapheme. Duhoux's rationale seems to be that cannot be CM 96 because then there would be some ambiguity between the latter and CM 95. Yet instances such as those in ENKO Abou 021 and KALA Arou 005 prove that CM 96 can have only four strokes in its upper portion, and ARPE Avas 001 and ENKO Abou 025 contain "intermediate" forms with five strokes (Table 2.74). The example in the newly collected RASH Avas 002 (see Table 2.76) even exhibits the four strokes at the same time as a feature that clearly distances it from CM 95: the vertical stroke crosses the lowest horizontal stroke, as in ENKO Arou 001, PYLA Psce 001 and ENKO Abou 013 (Table 2.74).

Table 2.74: Paleographical variation of CM 96 in CM 1.

				
ENKO Abou 007	ENKO Abou 013	ENKO Abou 021	ENKO Abou 025	ENKO Abou 031
				
ENKO Arou 001.02	ENKO Arou 001.09	ENKO Arou 001.24	ENKO Arou 001.26	KALA Arou 005.05
				
KALA Arou 005.05	ARPE Avas 001	KALA Mbij 001	KALA Mbij 002	PYLA Psce 001

[290] Full discussions of this grammatical feature in 4.2.2.2.4 and 5.5.

Table 2.75: Paleographical variation of CM 96 in CM 2.

			
ENKO Atab 002.A.I.30	ENKO Atab 002.B.II.05	ENKO Atab 003.A.07	ENKO Atab 004.B.08

Table 2.76: CM 96 in RASH Atab 004 and RASH Avas 002.[291]

	
RASH Atab 004.A.05	RASH Avas 002

If we accept the identification of the shape in ENKO Abou 031, we are left with no attestations of CM 95 in the clay balls subcorpus. Crucially, if CM 95 was not part of the signary used in the clay balls, then the permissiveness of variation displayed by CM 96 would not risk ambiguity anymore. It may, of course, have been the case that the two signs coexisted, but were still sufficiently distinct as to avoid confusion. For the sake of comparison, I present here the known variants of the sign in CM 2 and RASH Atab 004.

Table 2.77: Paleographical variation of CM 95 in CM 2 and RASH Atab 004.

			
ENKO Atab 002.A.I.38	ENKO Atab 003.A.10	ENKO Atab 004.B.15	RASH Atab 004.A.11

Keeping in mind the indications that CM 96 had a higher degree of formal variation than earlier thought, especially in the balls, I now draw attention to the set of sequences shown in Table 2.78.

[291] The drawing of RASH Avas 002 is by H. David (apud Matoïan 2012: 155, fig. 34).

Table 2.78: Sign sequences possibly related to 82-96-88-23.

Inscription	**Sequence (*HoChyMin*)**	**Form in question**
ENKO Abou 031	82-**95**-88 > 82-**96**-88 (?)	
KITI Iins 001.02	82-**95**-88 > 82-**96**-88 (?)	
ENKO Arou 001.02, 09, 26	82-**96**-88-23	
ENKO Abou 068	61-**85**-88 > 82-**85**-88 (?)	
ENKO Avas 005	(102-)82-**69**-88-97-23	

I begin by commenting on ENKO Avas 005, whose reading deserves two observations. First, there is the possibility, contemplated by Olivier, that the first sign (read as a doubtful CM 102) is not part of the main inscription, but rather a mark executed independently on the container (possibly a large amphora). Not only the sign in question is slightly removed from the sign-group, but also it has a different orientation, if it is indeed 102 (it appears to be rotated 90^{o} to the left).[292] Thus, almost certainly 82-69-88-97-23 is to be read separately. Secondly, Olivier equates the possibility of reading it as CM 85 instead of 69, though his judgment is that it "n'est pas beaucoup plus satisfaisant". Yet this view is not farfetched, if we compare the doubtful sign in question with the variant of CM 85 used in ENKO Abou 064 (Table 2.79).

Table 2.79: Repeated sign-sequence in ENKO Abou 040, 064 and 066.

Inscription	**Sequence (Reading in *HoChyMin*)**	**Form in question**
ENKO Abou 040	01-23-72-**85**	
ENKO Abou 064	01-23-72-**85**	
ENKO Abou 066	01-23-72-**85**	
ENKO Avas 005	82-**69**-88-97-23	

This demonstrates that for ENKO Avas 005 the reading 82-85-88-97-23 is *at least* as likely as 82-69-88-97-23. The sequence thus becomes slightly reminiscent of 82-96-88-

[292] See *HoChyMin*: 179.

23 (ENKO Arou 001). This brings us to second main topic of this section: the relationship between forms CM 85 and 96.

CM 85 (Table 2.80) shows the secure instances of CM 85.

Table 2.80: Secure instances of form CM 85.

				
ENKO Abou 036	ENKO Abou 037	ENKO Abou 039	ENKO Abou 040	ENKO Abou 051
				
ENKO Abou 064	ENKO Abou 066	ENKO Abou 068	ENKO Abou 081	

As can be seen, it exhibits defining features that are similar or fully coincide with the diagnostic traits of CM 96:

1) The upper part of CM 85 has five or six strokes; CM 96 normally has six or seven strokes.
2) Two of the strokes of the upper part of CM 85 are parallel and horizontal; this is also true of CM96.

A fluctuating feature of CM 85 is that its lower part can have two parallel vertical strokes (ENKO Abou 051 and 068), two parallel vertical strokes on the top of one vertical (ENKO Abou 039 and 040), two vertical strokes (ENKO Abou 066), or just one vertical stroke (ENKO Abou 036, 037, and 081). The two last options are also possible in CM 96. Yet all examples of CM 85 have a structure that can be described as subtriangular or V-like. This is not a diagnostic feature of CM 96 (as established in *HoChyMin*), but it does tip scales in favor of reading 82-85-88-97-23 instead of 82-69-88-97-23 in ENKO Avas 005. Notice that elsewhere CM 69 becomes is never sub-triangular (cf. Tables 2.59 and 2.60).

Given that CM 85 and 96 have diagnostic traits in common, I would like to make a case that they are allographs of the same sign. The arguments in favor are not just paleographical and can also be drawn from the distribution of the two forms. First, CM 96 is attested in all of the main subcorpora, while CM 85 is restricted to the clay balls (excluding the case of ENKO Avas 005). This might suggest that CM 85 is a grapheme peculiar to the signary used in the balls, but there evidence favoring its interpretation as an allograph. Thus, CM 85 is never sequence-initial and CM 96 is found very rarely in that position. In only two out of sixteen examples does CM 96 begin a sequence in CM 2; it is possibly initial also in KALA Mbij 001 and 002, but the

reading direction in these two inscriptions is not clear. Finally, in three out of four times that CM 85 is not final, the sign is preceded by CM 88; likewise, in two out of six non-final instances of 96 in CM 1 the sign is found before 88. If we look at the behavior of CM 88 in CM 1, we will see that it is never initial, and that in five of its twelve safe occurrences (41.7%) it is preceded by either CM 85 or 96. Admittedly, this is not direct proof, but there is at least a hint at a special relation between CM 85 and 96, and CM 88.

In light of all the aspects considered, I think there are enough indications hypothesize that CM 85 and 96 are allographs of the same grapheme.

Lastly, the form CM 114, attested only twice (ENKO Mins 002 and Mlin 002) can easily be explained as a third allograph (cf. Table 2.81). Its only atypical trait is the presence of four horizontal strokes in the example of ENKO Mlin 002, but this sign is subtriangular like CM 85, and for the latter a descending succession of strokes is normal (Table 2.80).

Table 2.81: Instances of the rare form CM 114 according to *HoChyMin*.

	
ENKO MIns 002	ENKO Mlin 002

In favor of the equation of CM 114 with 85 is the fact that ENKO Mins 002 and Mlin 002 have been dated to the LC III (1190-1050 BCE) and LC IIIA (1190-1100 BCE), respectively, and therefore are contemporary with the clay balls, where we the variant CM 85 is most productive.

2.3.19 Forms 88, 89 and 90

It has been argued in 2.2.1.1 that CM 89 and 90 most probably are variants of the same sign within CM 2. Here I hypothesize a merger of these two forms with CM 88 (CM 1).[293] As shown in Table 2.1 (see section 2.1) their differences mirror closely those of CM1 70, 87 and 92 and their counterparts in CM 2 and RASH Atab 004. Thus, CM 70, 87, 88 and 92 appear in various individual inscriptions with a V structure, but the latter becomes more angular in the tablets from Enkomi and Ugarit. It is also favorable that the distribution of CM 88 and 89+90 does not disagree, as both have a preference for the middle and end of sign-sequences (Table 2.82).

[293] Ferrara (*CMI* I: 242-243) has already pondered the assimilation of CM 88 and 89, although she thinks CM 89 and 90 are separate forms.

Table 2.82: Positional frequency of forms CM 88, 89 and 90.

Form	Initial	Medial	Final	Isolated	Total	Relative distribution
88	0	10	4	0	14	Never initial
89	1	1	3	0	5	Well-distributed
90	0	5	4	0	9	Never initial
89+90	1	6	7	0	14	Rarely initial

2.3.20 Forms 101, 102 and 103

CM 102 corresponds to one of the most firmly individualized signs of Cypro-Minoan. It is the most recurrent sign shape and is well distributed in all subcorpora. Two other forms, CM 101 and 103, have a very similar ductus, but are more scarcely attested and much less well distributed. This raises the question of whether one of them is just as an allograph of CM 102.

Table 2.83: Instances of form 101.

				
ENKO Abou 005	ENKO Abou 010	ENKO Abou 075	ENKO Arou 001.04	MYRT Mvas 001
				
MYRT Mvas 002				

Table 2.84: Instances of form 103 according to *HoChyMin*.

				
ENKO Abou 020	ENKO Abou 038	ENKO Aost 002	ENKO Arou 001.01	KALA Arou 001.14

To begin with, there is the incongruous fact that according to *HoChyMin* CM 102 is attested abundantly in RASH Atab 004, ENKO Atab 002-004 and the clay balls, but wholly absent from ENKO Arou 001. Instead, Olivier counts two instances of CM 101 and seven examples of CM 103 in the Enkomi cylinder. Given that CM 102 is otherwise ubiquitous, it is statistically very unlikely for it to be absent from what is one of the lengthiest Cypro-Minoan inscriptions. Thus, either CM 101 or 103 (Table 2.85) ought to be an allograph of 102 in this text. The question is which.

Table 2.85: Comparison between forms CM 101 and 103 in ENKO Arou 001.

CM 101	**CM 103**
	
ENKO Arou 001.04	ENKO Arou 001.01

The issue is not easily settled. As regards frequency, both occurrences of CM 101 seem to be in the middle of a sequence, whereas CM 103 is attested seven times, *at least* four of which possibly sequence-initially, but this appraisal is not definitive as parts of the inscription do not have sequence dividers (see 5.6.2.1 and Appendix A). Paleography is potentially more helpful. In other inscriptions, CM 101 does seem to be compatible with CM 102. As Olivier does not expound them, we can only speculate on the reasons that he interprets the two forms as individual signs: presumably, he follows É. Masson in distinguishing CM 101 ( , ) from 102 ()[294] because the lateral strokes of the former are one per side, are shorter and occupy practically only the upper portion of the sign, barely extending to below the middle horizontal line. Yet neither the amount, nor size, or the position of the lateral strokes are reliable bases for the distinction, as there are characters characterized as CM 102 in *HoChyMin* presenting the same features as CM 101 (see Table 2.86).

Table 2.86: Comparison between some variants of forms CM 101 and 102.

CM 101		**CM 102**	
			
ENKO Abou 005	ENKO Abou 010	ENKO Avas 010	RASH Atab 001.03
			
ENKO Abou 075		KATY Avas 002	

Another trivial trait that CM 101 shares with 102 (and which is also seen in CM 104[295]) is the use of a dot instead of an upper central vertical stroke: this is the case in ENKO Abou 004 and 075. As the CM 101 of ENKO Arou 001 is thoroughly consistent with the CM 101 = 102 of the clay balls, I would consider safe the assimilation of the two forms. Thus, as in other abovementioned cases, the idea that two very similar sign

[294] Cf. Figure 1.3 in 1.1.3.
[295] Cf. ENKO Abou 080 (Appendix A).

shapes, one well-attested (CM 102) and the other quite rare (CM 101), represent distinct Cypro-Minoan graphemes is suspicious.

The immediate implication of this merger is that the CM 103 of ENKO Arou 103 must be a distinct sign. However, outside ENKO Arou 001, three of the five signs read as CM 103 in the remaining Cypro-Minoan inscriptions (ENKO Aost 002, KALA Arou 001.14? and RASH Atab 004) might correspond to misidentified examples of CM 102 (see Appendix A). This is sufficient to cast doubt on the two other examples (ENKO Abou 020 and 038) as well.

Table 2.87: Alleged instances of CM 103 in the clay balls.

	
ENKO Abou 020	ENKO Abou 038

2.3.21 Hapax graphomena and rare signs

Because the epigraphic evidence on which our knowledge is based is always incomplete, ancient scripts often feature rare and hapax sign forms which are difficult to explain and resist interpretation, even after decipherment. With its small but conspicuous set of untransliterated syllabograms, Linear B is one example. As already hinted at in 2.1, such cases usually reflect one of two situations: (1) they represent signs of infrequent use and therefore equally infrequent attestations; (2) they are graphic variants of signs that are already known. In 2.2.1 we have seen that none of the lengthiest Cypro-Minoan inscriptions employs more than 59 different signs, meaning that the 72 signs envisaged by Olivier for his CM 1 and the 96 contemplated for all varieties must be overrepresentations. At least part of the problem is that variants have been counted as independent signs and taken for granted as such. This does not prevent the possibility, indeed the likelihood, that some of the rare characters are signs on their own right, and even that more unusual signs of Cypro-Minoan are yet to be discovered. Yet the discrepancy between the number of signs used in the lengthier texts and the amount of forms inventoried in *HoChyMin* suggests that most of infrequent shapes do not correspond to different graphemes.

Most of the rare Cypro-Minoan forms have already been addressed in the foregoing sections, as there is evidence that they are, or could be, allographs of signs used in the more homogeneous subcorpora: CM 02, 12b, 58, 66, 94, 103, 105, and 114. As argued in Appendix A and mentioned in 2.2.1.4, CM 83 and 84 are ghost forms.

One form that is not part of the selected subcorpora and has not been discussed so far is CM 98. This form was identified by É. Masson based on a single attestation on RASH Atab 001, a clay tablet from Ugarit. Yet this is one case where the separation of a rare sign by É. Masson and Olivier seems insightful and has come to be supported by

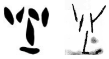
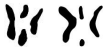
further evidence and finds. On one hand, with three inscriptions compiled in *HoChyMin*, ARPE Avas 001, ENKO Avas 001 and KALA Ppla 001, three dubious signs appear to be additional instances CM 98, especially the example in ENKO Avas 010 (𐔾) (see Appendix A). However, the characters inscribed on ENKO Aost 001 and KALA Ppla 001 are read by Olivier not as instances of CM 98, but rather as an otherwise unattested "pure" logogram. The extra inscriptions collected in *CMI* have helped to cement the identification, however. The same form seen in RASH Atab 001 is now attested in a two-sign inscription on the underside of the base of a ceramic bowl from Klavdia-*Tremithos* (KLAV Avas 001). CM 98 is also the most plausible match for the damaged sign on ENKO Psce 005. Taken together all these forms ascertain a larger array of variants for CM 98, with and without a foot. The variant with a lower horizontal stroke is very similar to CM 99 (𐔿), but the two coexist in RASH Atab 001 and therefore must stand for different graphemes. The new and uncollected inscription from Erimi-*Kafkalla* confirms that the upper central part of the sign varies between a two-stroke inverted V (/\) and a three-stroke subtriangular shape (see Table 2.88).

Table 2.88: Possible instances of CM 98.

Inscription	Form	Edition	Current reading
ENKO Aost 001.01		*HoChyMin*	201 (logogram)
ARPE Avas 001		*HoChyMin*	Not transnumerated
ENKO Avas 001		*HoChyMin*	Not transnumerated
KALA Ppla 001		*HoChyMin*	201 (logogram)
RASH Atab 001.02		*HoChyMin*	98
KLAV Avas 001		*CMI*	98
ENKO Psce 005		*CMI*	Not transnumerated
Erimi-*Kafkalla* T.2/2		Hirschfeld (2012b)	84

Table 2.89 summarizes the interpretation of all rare forms and hapax graphomena.

Table 2.89: Interpretation of the hapax graphomena and rare sign forms.

Sign	Form	Attestations	Possible interpretation
02		4	Less schematic variant of CM 34 ()? (Only attested at Ugarit)
12*b*		2	Unfinished examples of CM 13?
26		5	Independent sign?
58		1-3	Independent sign? (One instance may actually be CM 25 or 102)
63		3	Variant of CM 63 ()? (Exclusive to inscribed ceramic handles from Kition)
66		1	Mistake for CM 65 ()?
83		—	Ghost sign
84		—	Ghost sign
94		1	Mistake for CM 35 ()? (In RASH Atab 001)
98		2-7	Independent sign (attested on Cyprus and at Ugarit)
103		5-7	Independent sign in ENKO Arou 001 and a variant of CM 102 elsewhere?
105		2	Probably independent sign (so far only at Ugarit)
108		2	Early variant of CM 107 () on hard supports?
109		5	Late variant of CM 53-54-55 on hard supports? Compare especially CM 53 () and 55 ()
114		2	Probably a variant of CM 85/96 on hard supports

2.3.22 Numbers

Cypro-Minoan numerical notations are so far scarcely attested, but their existence is indisputable (Table 2.90).

Table 2.90: Attested Cypro-Minoan numbers.

				
CC IIII CC	CCC II	CC IIIIII	IIIIIII	III
ATHI Adis 001	ENKO Aost 001.01	ENKO Aost 001.01	KALA Arou 004.04	KATY Avas 002
				
II	III	CC XXX	IIII	
KITI Avas 016	KITI Avas 016	ENKO Mvas 001	RASH Atab 002.02	

There are clearly three different numerical signs: dots (•), vertical strokes (|) and horizontal strokes (–). The dots are attested to the left of both the vertical and horizontal strokes, so it can be safely assumed that they present higher units. For this reason, the numbers of Cypro-Minoan so far have straightforward matches in the other Aegean-Cypriot scripts (Table 2.91).

Table 2.91: Numerals in the Aegean-Cypriot syllabaries.[296]

Linear A	Linear B	Cypro-Minoan	Cypro-Greek	Value
		Unattested	Unattested	10,000
		Unattested	Unattested	1,000
			?	100
				10
				1

Thus at present it seems that • stands for the hundreds, | for the tens and – for the units.

2.3.23 Punctuation signs

The repertoire of non-phonographic Cypro-Minoan characters includes some punctuation signs, termed "stictograms" in *HoChyMin*. The least problematic are the sequence-dividers (Table 2.92).

[296] For Linear A and B, see *DocMyc*[2]: 34, 53. For Cypro-Greek, see *DGAC*. Chrisomalis (2010: 56-57, 61-63, 65-66) contains a synthesis for these three scripts.

Table 2.92: Sequence-dividers (|) in the selected subcorpora.

			
ENKO Abou 013	ENKO Arou 001.02	ENKO Atab 003.A.03	RASH Atab 004.A.05

The tablet RASH Atab 004 makes use of a sort of entry or "paragraph" marker (¶). As discussed in 2.2.1.2, ENKO Arou 001 possibly contains an entry marker of some kind, which prompts the question of whether despite formal differences it consists of the same grapheme as the ¶ from Ugarit (Table 2.93).

Table 2.93: Cypro-Minoan entry or "paragraph" marker (¶).

	
ENKO Arou 001.02	RASH Atab 004.A.05

Finally, the CM 2 tablets (ENKO Atab 002.B.I.10, 20; ENKO Atab 003.A.20) make use of a stictogram that Ferrara dubs *punkt*-mark. They consist of dots (●) executed by puncturing the clay with the stylus (Table 2.94).[297]

Table 2.94: CM2 punkt-marks (●).

		
ENKO Atab 002.B.I.10	ENKO Atab 002.B.I.20	ENKO Atab 003.A.20

Although the fragmentary state of the tablets does not allow us to have a complete vision of the patterning of the *punkt*-marks, Ferrara argues that because of their occurrence in lines 10 and 20 they mark lines of tens. This practice is also attested in Neo-Assyrian cuneiform texts from Nineveh.[298]

[297] Besides the dots previously known, Ferrara (*CMI* I: 207) affirms that there is one more example between lines 17 and 18 of ENKO Atab 004.B, which I could not verify based only on the published photographs.
[298] *CMI* I: 207.

2.3.24 Results

Tables 2.95-2.97 summarize the results of the analysis in the form of a combined working signary for the four selected subcorpora: ENKO Arou 001, ENKO Atab 002-004 (CM 2), RASH Atab 004 and ENKO Atab 001-084. This is meant to replace the sign-lists framed (and conditioned) by the traditional division. The outcome is a tentative list of 57 signs which, depending on the validity of the assimilations proposed above, could increase to as many as 70.[299] Either number is significantly inferior to the 96 syllabograms of *HoChyMin* and far more in line with the amount of individual signs used in the largest inscriptions: no more than 59. And while some of the hypothesized assimilations may be fragile, it is not less possible that other mergers will have to be made when further epigraphic evidence is unearthed.

Of these 57 potential individual graphemes, *only seventeen are attested beyond doubt in all of the four selected subcorpora*. This cannot be taken as an indication that we are dealing with four distinct writing systems and that the 39 signs that are different are all additions to an original core of very few syllabograms—which is more or less the logic that governs the traditional division. The small number of correspondences in the four subcorpora is more easily explained by a combination of two factors. First, not all signs of each subcorpora are attested, which is particularly obvious in the case of ENKO Arou 001 and RASH Atab 004. For example, it must be by accident that CM 01 (𐘁) is not attested in ENKO Arou 001, as the sign appears in the three remaining subcorpora. Secondly, because of the limitations of the corpus, we are still unable to distinguish fully between individual graphemes and allographs. This is a continuous warning that we should not assume the superficial divergences in the signaries to be categorical proof that Cypro-Minoan is not unitary.

It has been repeatedly underlined that the theory that views CM 1, CM 2 and CM 3 as separate scripts adapted to different languages lacks solid grounds. This seems demonstrated for CM 1 and 3, but if there is any subcorpus that maintains its chances of representing a separate subscript, it is CM 2: even in the light of this chapter, it contains a number of apparently unique signs e.g. CM 29, 60, 68, 80) that cannot easily be dismissed as allographs of signs from other documents. However, the gap has been much reduced. As shown in Table 2.99, of the 57-59 signs of CM 2 that can be considered safely individualized, 46 have secure matches in other subcorpora (including two signs otherwise found only at Ugarit), five have possible matches and six are exclusive to CM 2 (CM 29, 52, 60, 68, 72b, 80). This means that at least 80.7% of CM 2 is not unique, and this percentage could be increase to as much as 89.5%.

We should not haste to the conclusion that CM 2 is the adaptation of the original Cypro-Minoan syllabary to a different language. In fact, in section 5.5 we will see evidence that the language of CM 2 and some CM 1 inscriptions is the same. A writing

[299] 70 includes the 69 signs in Tables 2.95-2.97 plus CM 98, which is not attested in none of the selected subcorpora. Cf. Table 2.98.

system can have more multiple varieties owing to factors such as dialectal variation, geography, politics or tradition. The very Cypro-Greek syllabary, as well as the Greek, Carian and Etruscan alphabets are cases in point. The "Common" variety of the Cypro-Greek syllabary has five signs that are formally distinct from the Paphian variety (*o*, *u*, *le*, *ri*, *so*), i.e. 9.3% of its signary is not shared.

What can we make of the deviances of CM 2 then? As noted by Ferrara, the CM 2 tablets obey to a specific, normalized tradition.[300] Is it possible that the use of special characters is the combined reflex of a singular scribal style, special textual genre and dialectal differences? The writing style can affect the shape of the signs, some types of texts may be copies from older archives, with more archaic forms of the language in question, and dialectal (or conservative?) phonological features can prompt the use of otherwise rare signs, while rarifying syllabograms that are recurrent elsewhere in the Cypro-Minoan corpus.

Signs CM 68 and 95 present peculiar cases: both have predecessors in Linear A and ENKO Atab 001 (from no later than 1525-1425 BCE), but within Cypro-Minoan proper they are rarely attested outside CM 2. Moreover, they were not recycled in Cypro-Greek (ca 1050-950 BCE). This discontinuity might be significant, possibly even indicating that the two signs became obsolete in the final stages of Cypro-Minoan.

It seems warranted to keep both possibilities in mind for the time being: (1) CM 2 is a second, derivative script; (2) CM 2 is a variety of Cypro-Minoan whose peculiarities owe to one or multiple factors.

The rearranged signary at the end of this chapter provides the basis for the analytical chapters below. However, to clarify at all times what are the degrees of certainty of each hypothesis and to avoid circular reasoning, explicit reference to the forms of *HoChyMin* will always be made. Thus, for example, the merged forms CM 53/54/55 may be assigned tentatively the same phonetic value, but the hypothetical transliteration of any sequence will always be preceded by a specification of which *HoChyMin* form is being transliterated: i.e. whether it is 53, 54 or 55. In this way, the reader is always supplied with the tools necessary to reproduce the analysis and make her or his own judgment about its validity.

[300] *CMI* I: 212.

Table 2.95: Working signary of the selected subcorpora (CM 01-30).

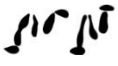
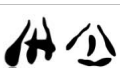
	ENKO Arou 001	**ENKO Atab 002-004**	**RASH Atab 004**	**ENKO Abou 001-084**
01	—			
02	—	—		—
04				
05			—	
06				
07		—	—	—
08				
09				
10	—		—	—
11			 (?)	—
12			—	
13	—	78 	—	
17	—		—	
19		79 		
21				15  21 
23				
24			—	
25				
26		—	—	—
27				
28	—			
29	—		—	—
30	—		—	—

Table 2.96: Working signary of the selected subcorpora (CM 33-73).

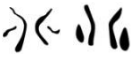
	ENKO Arou 001	**ENKO Atab 002-004**	**RASH Atab 004**	**ENKO Abou 001-084**
33	—		—	—
34	—	56 	—	
35				—
36	—		—	
37			—	
38				
39		49 	—	
40	—	—		—
41		—	<u>37</u> 	
44			—	
46		47 	—	
50		51 	51 	
52	—		—	—
53		54 	55 	53  55 
59	—		—	
60	—		—	—
61	—		—	
62	—		—	—
64	—	—	—	
68	—		—	—
69			71 	69  72 
70				
72*b*	—		—	—

Table 2.97: Working signary of the selected subcorpora (CM 74-112).

	ENKO Arou 001	**ENKO Atab 002-004**	**RASH Atab 004**	**ENKO Abou 001-084**
73		—		
74	—			—
75				—
76	—			—
80	—		—	—
81	—		—	
82				
86	—	—	—	
87				—
88		89  90 	—	
91	—	—		
92	—			—
95	—			—
96				85  96 
97			—	
99		65 	100 	67  99 
102	101 			101  102 
103		—	—	 (?)
104				
105	—	—		—
107			—	
110			—	
112	—	—	—	

Table 2.98: Holistic grid of signs from all Cypro-Minoan inscriptions (rare forms not included).

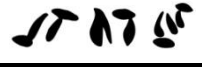
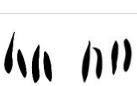
01		21/15		38		65/67/99/100		88/89/90	
02		23		39/49		68		91	
04		24		40		69/71/72		92	
05		25		41/37b		70		95	
06		26		44		72b		96/85	
07		27		46/47		73		97	
08		28		50/51		74		98	
09		29		52		75		102/101	
10		30 (= 41?)		53/54/55		76		103	
11		33		59		80		104	
12		34/56		60		81		105	
13/78		35		61		82		107	
17		36		62		86		110	
19/79		37		64		87		112	

Table 2.99: Signs attested in CM 2 and ENKO Arou 001 or ENKO Abou 001-084.

01		23		39/49		82	
04		24		44		87	
05		25		46/47		88/89/90	
06		27		50/51		92	
08		28		53/54/55		96/85	
09		30(+41[?])		59		97	
11		33(?)		61/63		102	
12		34/56[(?)]		69 (+72[?])		104	
13/78		35		70		107	
17		36		72*b*[(?)]		110	
19/79		37		75			
21/15		38		81[(?)]			

Chapter 3

COMPARATIVE ANALYSIS

> *There can be no doubt about the Minoan origin of this classical* [Cypriot] *script, since not only are some simple signs identical, or almost so, to the Minoan ones, but they have the same values as the corresponding sign in Linear B. In many more cases it is possible to trace some resemblance between signs having the same value and to suggest how they may have evolved. It must be remembered that the script must have been in use over a period of a thousand years, and it is not surprising that many signs show little resemblance.*
>
> J. Chadwick[301]

3.1 THE METHOD AND ITS PREMISE

By comparative analysis I mean the procedure of investigating the sign values of an undeciphered script by finding similar sign shapes in closely related writing systems (if they exist) and comparing their phonetic values. The results are sounder if there is more than one direct "relative", including the script's model and at least one derivative system. If a sign of the undeciphered script has *formal counterparts* in more than one comparandum, and the comparanda present a *similar or identical phonetic value*, then that value is assigned to the undeciphered sign as a *working hypothesis*. In other words, the compared signs should at the same time be *homomorphous* and *homophonous*, or nearly. These criteria help to avoid matching "false friends", i.e. graphemes formally similar but phonetically different. The routine example of Greek P = *r* vs. Latin P = *p* serves as a warning. Hence, ideally the method involves two disciplinary domains: it begins with *paleographical* comparison of the scripts' signs and then resorts to phonological, or rather *phonographic*, examination.[302] This framework will orientate the analysis in 3.4.

Even before Cypro-Minoan had been discovered, Evans observed that the signs of the Cypro-Greek syllabary might "supply a clue" to the sign values of the undeciphered Aegean scripts.[303] After his identification of the Bronze Age Cypriot script in 1909, comparative exercises began to appear in the literature, but prior to the decipherment of Linear B (1952) all that scholars could do was extrapolate the phonetic values of Cypro-Greek, then the only legible script in the family, back to Cypro-Minoan

[301] Chadwick (1987: 52).
[302] *Phonography*: in Linguistics, the transcription of speech by means of signs representing elements of sound.
[303] This observation is first found in Evans (1895: 83), who after the discovery of Cypro-Minoan reformulated it with a bit more caution in his *Scripta Minoa I* (Evans 1909: 72).

and its presumable Aegean relatives. With little surprise, Kober described these attempts as "intrepid".[304] Despite its obvious perils, the method did play a part in the decoding of Linear B. Already in 1940, Ventris compared sixteen Cypro-Greek signs with alleged Linear A and Linear B counterparts.[305] Remarkably, seven of them would prove correct or nearly after his decipherment of the Mycenaean script (*lo*, *na*, *pa*, *se*, *ta*, *ti*, *to*). The number of false matches (more than a half) was sufficient to make the method unfruitful on its own, but it did complement other methods. As Linear B and Cypro-Greek were fairly distant in time and space, and originate in different adaptations of Linear A, this is remarkable as far as Cypro-Minoan goes. Thus, the two deciphered syllabaries betray a certain *continuity* in the history of this family of syllabaries. Scripts of both Cyprus and the Aegean feature a number of syllabograms that preserved, with few changes, their basic form *and* value, usually characters with simpler designs involving fewer strokes, such as *pa* (ǂ) or *sa* (ᛉ, ∨). Table 3.1 lists nine of the most compelling cases of syllabograms that changed little or nothing across four scripts—Linear A and B, Cypro-Minoan and Cypro-Greek—and which scholars routinely acknowledge in the literature (the issue of the legibility of Linear A is addressed in 3.2).

Table 3.1: Homomorphous and homophonous schematic signs in the Aegean-Cypriot scripts.

Linear A		**Linear B**		**Cypro-Minoan**		**Cypro-Greek**	
𐄁	*ro*[?]	𐄁	*ro*	𒾨 𒾩	05	𐄁	*lo*
𐄇 𐄈	*na*	𐄇	*na*	𒾪 𒾫	08	𐄈 𐄈	*na*
𐄉 𐄊	*pa*[?]	𐄉	*pa*	𒾬	06	𐄉	*pa*
𐄋 𐄌	*po*[?]	𐄋	*po*	𒾭 𒾮	12	𐄋 𐄋	*po*
𐄍	*da*	𐄍	*da*	𒾯 𒾰	04	𐄍	*ta*
𐄎 𐄏	*ti*	𐄎	*ti*	𒾱	23	𐄏 𐄏	*ti*
𐄐 𐄑	*to*[?]	𐄐 𐄑	*to*	𒾲 / 𒾳	13/78	𐄑 𐄑	*to*
ᛉ	*sa*[??]	ᛉ	*sa*	𒾴 𒾵	82	∨	*sa*
𐄒	*se*[?]	𐄒	*se*	𒾶 𒾷	44	𐄒 𐄒	*se*

From the 1950s onwards,[306] this continuity motivated more or less extensive comparative approaches (sometimes articulated with other methods) by a number of scholars who hypothesized phonetic readings for many more than nine Cypro-Minoan syllabograms. These efforts led to relatively consensual proposals for some Cypro-

[304] Kober (1948: 100).
[305] Ventris (1940: 510). At the time he was convinced that Linear B was "merely a new systematization of the same basic elements" of Linear A (*ibid*.: 508).
[306] The 1950s were a propitious for these approaches because they witnessed not only the decipherment of Linear B, but also the discovery of relatively long Cypro-Minoan texts at Enkomi and Ugarit (see 1.1.3).

Minoan signs. With some signs, however, authors diverged greatly because they had particular views of what Cypro-Minoan was and what language(s) it concealed. Not long after the decipherment of Linear B, Sittig (1956) believed that Cypro-Minoan was used to write a well-cloaked Bronze Age Greek dialect, and that belief led him to the unfounded assumption that some series of syllabograms represented voiced, voiceless and voiceless aspirate stops all at once, like the later Cypro-Greek.[307] Owing to speculations that certain Cypro-Minoan sub-scripts were devised for Hurrian or a Semitic language, the sound values proposed by É. Masson and Faucounau include syllabic series for velar and "laryngeal" fricatives (*ḫ*, *ǵ*, *h*, or *ḥ*) or, as Nahm also, for more than one sibilant series (e.g. *s* and *š*). In these cases, the tentative readings were imposed on the evidence rather than being a consequence thereof.[308] These inconsistencies and the unconvincing decipherments that ensued explain why nowadays most authors are more cautions about investigating the sound values of Cypro-Minoan. Mostly, they limit themselves to highlighting the small number of syllabograms that shows clear homomorphy and homophony: fourteen according to Duhoux and Olivier, ten as per Steele.[309] Thus, after six decades of scholarship, there has been agreement on the hypothetical values for only ten Cypro-Minoan signs (as seen in Table 3.2) and most of these coincide with the more schematic and recognizable characters in Table 3.1.

Table 3.2: Consensual or near-consensual hypothetical values of Cypro-Minoan syllabograms from comparative approaches (1956-2013).[310]

Sign		Value	Agreement	Sign		Value	Agreement
01		*we*	Near-consensual	23		*ti*	Consensual
04		*t*/*da*	Consensual	25		*k/ga*	Near-consensual
05		*l*/*ro*	Consensual	44		*se*	Near-consensual
06		*p*/*ba*	Consensual	87		*l*/*ra*	Near-consensual
08		*na*	Near-consensual	102		*a*	Consensual

[307] Mann (1960: 41) and Ephron (1961: Fig. 3) also produced "decipherments" of Cypro-Minoan as a Mycenaean Greek dialect, but their work cannot be considered of comparative nature, because they assigned phonetic values to the signs in a way that was too arbitrary. As mere examples: Mann assigned the value *a* not to sign CM 102, as is universally agreed, but to CM 38; Ephron read as *ne* CM 04, widely believed to be *d/ta*.

[308] For a similar criticism see Facchetti et al. (2013: 64-65).

[309] Duhoux (2009b: 42, fn. 15), Olivier (2013: 8) and Steele (2013: 50-60). The exception is Facchetti *et al*. (2013: 65).

[310] The works subsumed in this table are Sittig (1956: 41), É. Masson (1973; 1974: fig. 26), Saporetti (1976: fig. 41), Faucounau (1977, 1980), Nahm (1981: Abb. 1-3; 1984: Abb. 2-3), Duhoux (2009b: 42, n. 15; 2013: 42), Facchetti *et al*. (2013: 65), Olivier (2013: Tab. 1.1) and Steele (2013: 55-60). Terminology: *near-consensual*: six/seven out of nine authors; *consensual*: eight/nine out of nine authors. In the cases of stop signs, the value is to be taken generically as "unmarked": for instance, *p*/*ba* might represent not only the voiceless bilabial stop /p/, but also its voiced counterpart /b/ or any other marked version of the sound.

At the same time, however, these correspondences seem to be symptomatic of a close relation between the four scripts. But if Cypro-Minoan is related to the Aegean syllabaries and Cypro-Greek, why is it that we do not have a larger number of obvious cognates? Of the different accounts that can be posited,[311] I think the most likely is a combination of two factors. On one hand, many of the Cypro-Minoan signs have undergone significant *paleographical developments* throughout the centuries in which the script was used. On the other hand, each derivational process, i.e. the adaptation of Linear A as Cypro-Minoan and the remodelling of the latter as Cypro-Greek afterwards, brought about a number of *structural modifications* that removed, added, or changed the value of, some signs. That Cypro-Minoan represents a disruption or a very different system regarding Linear A seems unlikely: even the few syllabograms that have gained consensus as clear cognates imply values representing various vowels (*a, e, i, o*) and consonants (*d*/*t, k*/*g, n, p*/*b, r*/*l, s, t, w*), so the essential phonographic matrix must have been preserved throughout (Table 3.3).

Table 3.3: Approximated values of Cypro-Minoan signs with accepted cognates in Linear A, Linear B and Cypro-Greek.

	A	E	I	O
	𐘀?		𐘁?	
D	𐘂?			
K	𐘃?			
L/R	𐘄?			𐘅?
N	𐘆?			
P	𐘇?			
S		𐘈?		
T	𐘉?		𐘊?	𐘋?
w		𐘌?		

Another problem is that comparative investigations have more often than not been conducted by comparing one normalized form of each sign of each of the scripts, not various examples of the signs as they appear on the inscriptions. Thus, if, for instance, a Cypro-Minoan sign derives from a "non-standard" variant of a Linear A syllabogram, the connection will be overlooked. Paleographical variation is a crucial

[311] Steele (2013: 50).

factor: even if a thorough method is followed, the research investigating Cypro-Minoan may still fail to see the relation between the signs of two scripts if the variant of one that served s model for the other is not attested, or vice-versa. In other words, we are at the mercy of the representativeness of the archaeological evidence.

Lastly, inter-script comparisons are practicable only when two conditions are satisfied: (1) the writing systems to be compared have a direct and well-established relationship; (2) they are deciphered or at least their signs are legible to a significant extent (regardless of whether the underlying languages are understood). There is widespread agreement that the Cypriot-Greek syllabary fulfills these two requirements,[312] but the situation with Linear A is more intricate. On one hand, the majority view that it was the model of Cypro-Minoan (or an early form thereof) still attracts some reservations; on the other hand, it is only partially deciphered and most of its values are unconfirmed. Thus, some researchers who engaged in comparative surveys have resorted to Linear B and left aside Linear A.[313] This choice is motivated by caution, but I would argue that including the Minoan script is less risky than overlooking it. By doing so, we can identify direct Linear A > Cypro-Minoan > Cypro-Greek *formal* correspondences, even if a number of the *phonetic values* of Linear A signs are uncertain or yield inexact matches. Conversely, using Linear B in its place as a term of comparison may assure the certainty of the *readings*, but in this way the *forms* of Linear A counterparts, which tend to be more akin to the characters of Cypro-Minoan, are disregarded. The implication is that potential Linear A > Cypro-Minoan > Cypro-Greek matches can be overlooked. A case in point is that of LA 11/*po*[?] (𐘇, 𐘗) > CM 12 (𐠎, 𐠏) > CGk *po* (𐀰, 𐀱) (see also Table 3.1). All syllabograms concerned are identical in *form and value*, yet, unlike other signs in the same situation, in the most recent scholarship only Olivier recognizes them as clear cognates.[314] The aim of the next section is precisely to address the issues relating to the connection between Linear A and Cypro-Minoan, and the state of decipherment of the former. It will be argued that there are no substantial impediments to using Linear A alongside Cypro-Greek in a comparative analysis of Cypro-Minoan.

3.2 LINEAR A AS A VALID COMPARANDUM

3.2.1 Linear A today: corpus and progress in decipherment

Linear A is a syllabic script used by the Minoans on different types of material supports and for multiple purposes. In administrative documents, a substantial component of logograms for commodities, numbers and fractions is also employed. The bulk of the

[312] É. Masson (1979b: 408); Egetmeyer (2013a: 107-108, 125); Olivier (2013: 16).
[313] See e.g. É. Masson (1974; 1987) and Steele (2013).
[314] Olivier (2013: 8). In Steele's (2013: 71-72) view, for example, the signs are not cognates.

inscriptions comes from Neopalatial contexts (1700/1650-1425 BCE), with the LM IB (1480-1425 BCE) being the most prolific period. Some texts appear to be earlier, namely from the MM II and MM IIIA (1800-1640/30 BCE). Likewise, there are indications, so far shy, of a survival of the script into the LM IIIA (1390-1320 BCE), i.e. the beginning of the Mycenaean domination of Crete.[315] Besides being the direct source of Linear B, by all accounts Linear A is closely related to the other Minoan script, Cretan Hieroglyphic, but the exact nature of the relation is unknown.[316]

The corpus of the script presently amounts to more than 7,400 signs on 1,527 inscribed objects,[317] 90% of which consist of clay documents such as tablets, sealings, and the so-called roundels and nodules.[318] The remaining inscriptions comprise in the main stone or ceramic recipients, but also include metal items (tools, recipients and adornments) and other types of objects. It goes without saying that most of the inscriptions come from the island of Crete, but a few have been found in the Aegean islands (the neighboring Kythera and Thera, as well as the more distant Kea and Samothrace), at Miletos in coastal Western Anatolia and possibly Tiryns, in the Peloponnese, and Tel Haror, in the Levant.[319] The classification of alleged Linear A inscriptions from Troy (Northwest Anatolia) and Tel Lachish (Levant) is far more questionable.[320] In any event, it seems certain that the script had some circulation in the Aegean Sea and on occasion travelled further East along with exported objects.

Despite all efforts, Linear A remains undeciphered and the language it conceals has not been convincingly linked with any known linguistic family. Yet the script is far from being impenetrable. The fact that many of its "core" syllabograms have close or exact formal matches in Linear B (cf. Tables 3.4 and 3.9) quickly suggested to scholars that the phonetic values of the Mycenaean script could be transported to Linear A. This has been the default procedure since the 1950s, although we cannot expect all phonetic values to be exact matches: evidently, Linear B is the product of an adaptation of Linear A to a language that surely possessed a different phonemic inventory (Greek).

Decades of scholarship have provided independent confirmation that the signs Linear A have values analogous to their Linear B counterparts in a good number of cases. Scholars like Packard (1974), Hooker (1975) and Godart (1984) made valuable

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[315] Del Freo and Zurbach (2011: 75, 84-85).
[316] See e.g. Olivier (1989: 49-50).
[317] This count includes the 1,427 inscriptions in *GORILA* plus 100 more announced by Del Freo and Zurbach (2011: 79). 7,400 is the estimated number of signs for the 1,427 inscriptions as it is not known yet by how many signs the corpus will be increased with the new documents.
[318] For these last two types of documents see e.g. Finlayson (2013).
[319] See *GORILA* V and del Freo and Zurbach (2011: 81). For the alleged instance of Linear A from Tel Haror (in the desert of Negev, about 23 km from the Mediterranean coast) see Karnava (2005). It consists of a pithos fragment incised before firing with three Cretan Hieroglyphic or Linear A signs, from a context dated to the Middle Bronze Age III or IIC (ca. 1650-1550 BCE). The classification of the script used cannot be decided conclusively, but the petrographic analysis of the object's clay shows it originates from the area of Myrtos-Pyrgos in southern Crete. Although the pithos must have been inscribed on the island, it suggests there was awareness in the Eastern Mediterranean that Minoan writing existed.
[320] Perna (2014: 256).

contributions to the verification of the sound values of Minoan syllabograms by comparing pairs of analogous Linear A and Linear B sign-sequences.

Table 3.4: Phonetic values of the Linear B syllabograms.[321]

	A	E	I	O	U	"COMPLEX" SIGNS
						a*$_2$** ***a*$_3$** ***au
D						***dwe*** ***dwe***
J			?		(?)	
K						
M						
N						***nwa***
P						***pte***
Q					—	
R						
S						***swi*** (??)
T						
W					—	
Z			?		(?)	
P$_2$	(?)		(??)			
R$_2$						***ra*$_3$**
T$_2$						***twe*** ***two***

The results of these attempts have been strengthened by Duhoux (1989). He sought to confirm the sign values of Linear A by means of not one, but several contextual texts, such as examining the positional frequency of the suspected vowel signs, and listing sign alternations in Linear A - B pairs of sequences and within Linear A itself. Duhoux was very cautious about the results: he considered different levels of security for each of

[321] Based on *DocMyc*[2]: 23, with updates reflecting post-1973 advances in the interpretation of the syllabary.

the values depending on how many contextual tests confirmed them. In order to underscore the meticulousness of his investigation, these tests are reproduced with a few necessary updates in Tables 3.5-3.8.

Table 3.5: Frequency of Linear B vowel-signs and their Linear A counterparts.[322]

	Signs	Initial	Medial	Final
LA	08/*a*?	140 (89.74%)	8 (5.12%)	8 (5.12%)
LB	*a*	1,296 (93.50%)	39 (2.81%)	51 (3.67%)
LA	38/*e*?	16 (64%)	2 (8%)	7 (28%)
LB	*e*	863 (77.67%)	125 (11.25%)	123 (11.07%)
LA	28/*i*?	87 (55.06%)	49 (31.01%)	22 (13.92%)
LB	*i*	233 (42.21%)	157 (28.44%)	162 (29.34%)
LA	61/*o*?	23 (85.18%)	2 (7.40%)	2 (7.40%)
LB	*o*	522 (55.47%)	74 (7.86%)	345 (36.66%)
LA	10/*u*?	31 (56.36%)	14 (25.45%)	10 (18.18%)
LB	*u*	113 (14.54%)	289 (37.19%)	375 (48.26%)

Table 3.6: Linear A internal sign alternations (adapted from Duhoux 1989: 67-68 and updated).[323]

Sequence	Text	Sequence	Text
a-*di-ki-te-te-*	PK Za 11	***ja***-*di-ki-te-te-*	PK Za 15
a-*sa-sa-ra-me*	PR Za 1; PK Za 11	***ja***-*sa-sa-ra-me*	Various[324]
a-*ta-i-*301-****wa***-*ja*	Various[325]	***ja***-*ta-i-*301-****u***-*ja*	AP Za 1
*a-ta-i-*301-wa-****ja***	See above	*a-ta-i-*301-wa-****e***	PK Za 11
*a-ta-****i***-**301-wa-ja*	See above	]*a-na-****ti***-**301-wa-ja*	IO Za 8
*ja-sa-sa-ra-****me***	See above	*ja-sa-sa-ra-****ma***-*na*	KN Za 10.a-b
*ja-di-ki-****te***-*te-*	PK Za 15	*ja-di-ki-****tu***	IO Za 2.1
*ja-su-ma-****tu***	SY Za 2 a	*wi-ja-su-ma-****ti***-*ti*	HT Zd 157
*i-pi-na-****ma***	Various[326]	*i-pi-na-****mi***-*na*	PK Za 10 and 11
*ki-****re***-ta_2	HT 85b.1-2; 129.1	*ki-****ri***-ta_2	HT 114a.1
*ki-re-****ta₂***	HT 85b.1-2; 129.1	*ki-re-****za***	ZA 1a.1-2
re-di-*se*	HT 85b.4	***ra-ti***-*se*	HT 6b.2
qe-ra_2-***u***	HT 1.1; 95 a/b.4-5	***qa***-ra_2-***wa***	HT 86 a.3

[322] According to Duhoux (1989: 116, fig. 8).
[323] The evidence is limited to pairs whose relation is supported by contextual clues (Duhoux 1989: 67).
[324] Complete and secure instances: IO Za 6; IO Za 16; PL Zf 1.1; PS Za 2.2; TL Za 1.
[325] PK Za 12; IO Za 2.1; IO Za 3; IO Za 7; SY Za 1; SY Za 3; KO Za 1.
[326] AP Za 2; VRY Za 1; TL Za 1; KO Za 1; PK Za 8; PL Zf 1.1.

Table 3.7: Corresponding pairs of Linear A and Linear B sign-sequences (based on multiple sources).[327]

Linear A		Linear B (Knossos)		
Sequence	**Text**	**Sequence**	**Text (KN)**	**Meaning**
a-ra-na-re	HT 1.4	*a-ra-na-ro*	As 1516	MPN
da-i-pi-ta	ZA 8.5; ZA 10 a.4-5	*da-i-pi-ta*	B 799	MPN
di-de-ru	HT 86 a.3; 95 a.4/b.4	*di-de-ro*	Dv 1504	MPN
di-di-ka-se	ZA Zb 3.1	*di-ta-ka-so*	Dl 916, Ga 427	MPN
du-su-ni	HT 108.2	*du-sa-ni*	Ap 639	FPN
ka-sa-ru	HT 10 b.3	*ka-sa-ro*	C 912, Dv 1450	MPN
ku-ku-da-ra	HT 117 a.7	*ku-ka-da-ro*	Uf 836	MPN
ku-pa$_3$-nu	Various[328]	*ka-pa$_3$-no*	Df 1219	MPN
ku-pa$_3$-na-tu	AP Za 2.1; HT 119.3	*ka-pa$_3$-na-to*	As 1516	MPN
ku-ru-ku	HT 87.5	*ku-ru-ka*	Vc 5510	MPN
ma-si-du	HT 43.1-2	*ma-si-dwo*	Fh 360	MPN
me-ki-di	ZA 14.1	*me-ki-ti*	Dv 1434	MPN
na-da-re	HT 117 a.5	*no-da-ro*	As 609, De 1228	MPN
pa-ja-re	Various[329]	*pa-ja-ro*	As 1519	MPN
qa-qa-ru	Various[330]	*qa-qa-ro*	As 604	MPN
qa-ra$_2$-wa	HT 86 a.3	*qa-ra$_2$-wo*	Ce 50	MPN
qe-ra$_2$-u	HT 1.1; HT 95 a/b.4-5			
si-ki-ra	HT 8 a.4	*si-ki-ro*	U 8210	MPN
su-ki-ri-ta	PH Wa 32	*su-ki-ri-ta*	Various[331]	GN
su-ki-ri-te-i-ja	HT Zb 158.b			
te-ja-re	HT 117 a.5	*te-ja-ro*	V 479	MPN
*to-*49-re*	PE 2.4	*ta-*49-ro*	Da 1588	MPN

The results themselves are presented in Table 3.9, which reflect current knowledge of the sound values of Linear A signs.

[327] FPN = Female personal name; MPN = Male personal name; GN = Geographical name. Bisyllabic pairs are not included in this survey because they are more likely to be similar by accident. For previous lists see Packard (1974: 92), Hooker (1975: 165), Godart (1984), Duhoux (1989) and B. Davis (2014). Notice that in the majority of cases the final vowel of Minoan personal names is replaced with the Greek ending -*o* /-os/ in their Mycenaean version. This is hardly unexpected.
[328] HT 1.3-4; HT 49 a.6-7; HT 117 a.3; HT 122 a.6/7; PH? 31 a.3; and also on HT 3.6.
[329] HT 8 b.4; HT 29.2; HT 88.5; ZA 10 b.5-6.
[330] HT 93 a.4-5; HT 118.2-3; 122 b.3-4
[331] KN Db 1324+, Df 1325 and Dn 1092+.

Table 3.8: Linear A internal sign alternations (adapted from Duhoux 1989: 67-68 and updated).[332]

Sequence	Text	Sequence	Text
a-*di-ki-te-te-*	PK Za 11	***ja***-*di-ki-te-te-*	PK Za 15
a-*sa-sa-ra-me*	PR Za 1; PK Za 11	***ja***-*sa-sa-ra-me*	Various[333]
a-*ta-i-*301-**wa**-ja*	Various[334]	***ja***-*ta-i-*301-**u**-ja*	AP Za 1
*a-ta-i-*301-wa-**ja***	See above	*a-ta-i-*301-wa-**e***	PK Za 11
*a-ta-**i**-*301-wa-ja*	See above	]*a-na-**ti**-*301-wa-ja*	IO Za 8
*ja-sa-sa-ra-**me***	See above	*ja-sa-sa-ra-**ma**-na*	KN Za 10.a-b
*ja-di-ki-**te**-te-*	PK Za 15	*ja-di-ki-**tu***	IO Za 2.1
*ja-su-ma-**tu***	SY Za 2 a	*wi-ja-su-ma-**ti**-ti*	HT Zd 157
*i-pi-na-**ma***	Various[335]	*i-pi-na-**mi**-na*	PK Za 10 and 11
*ki-**re**-ta*$_2$	HT 85b.1-2; 129.1	*ki-**ri**-ta*$_2$	HT 114a.1
*ki-re-**ta*$_2$**	HT 85b.1-2; 129.1	*ki-re-**za***	ZA 1a.1-2
***re-di**-se*	HT 85b.4	***ra-ti**-se*	HT 6b.2
qe-*ra*$_2$-***u***	HT 1.1; 95 a/b.4-5	***qa***-*ra*$_2$-***wa***	HT 86 a.3

[332] The correspondences are limited to pairs whose relatedness is supported by contextual evidence (see Duhoux 1989: 67).
[333] Complete and secure instances: IO Za 6; IO Za 16; PL Zf 1.1; PS Za 2.2; TL Za 1.
[334] PK Za 12; IO Za 2.1; IO Za 3; IO Za 7; SY Za 1; SY Za 3; KO Za 1.
[335] AP Za 2; VRY Za 1; TL Za 1; KO Za 1; PK Za 8; PL Zf 1.1.

Table 3.9: Phonetic values of Linear A syllabograms.[336]

	A	E	I	O	U
					
D					
J					
K					
M					
N					
P					
Q					
R					
S					
T					
W					
Z					
P_2					
R_2			**T_2**		
AU			**NWA**		

3.2.2 Linear A as the model of Cypro-Minoan

3.2.2.1 Objections and alternative theories

Although it is widely accepted that Linear A provided the template for Cypro-Minoan,[337] misgivings have occasionally been expressed. These can be narrowed down to three points: (1) anxiety over the apparent Cypriot choice for an Aegean model that was more distant to Cyprus than other East Mediterranean writing systems; (2) the lack

[336] Adapted with updates from Duhoux (1989) and B. Davis (2014: fig. 111).
[337] Among others, see É. Masson (1973b: 32-33), Palaima (1989a: 140) and Olivier (2013: 7-8).

of evidence for a clear historical-archaeological setting in which Cretan writing could have been introduced to the island; (3) alleged paleographical divergences.[338]

To solve the supposed problem of geographical distance and the superficial paleographical and phonetic divergences between signs of the Aegean and Cypriot syllabaries, Sherratt and Steele recently ponder versions of the old hypothesis by Lejeune, according to which Linear A and Cypro-Minoan represent different offshoots of a third, wholly unattested writing system, "Linear X".[339] Needless to say, this hypothesis is disadvantageous because it is uneconomical.

In fact, these doubts can be addressed. As regards the ancient Mediterranean, the notion of scripts "travelling" great lengths across the sea is not shocking. Nor is it normal for us to be able to pinpoint the exact time and place where the transmission of a script took place. For example, while there is still a great debate as to where and when the Greek alphabet was created, not many scholars doubt that it was created using the Phoenician script as a model. Furthermore, there is actually archaeological and textual evidence—however scarce—for early trade contacts between Crete, Cyprus and the Levant, starting in the MM IB-IIA (1900-1750 BCE) and increasing afterwards. The archaeological data would take us too much space to subsume,[340] but the evidence of texts can be briefly referenced. Most relevant is a tablet from the palatial archive of Mari, dated to the reign of Zimri-Lim (ca. 1780-1760 or 1705-1685 BCE), mentioning a "Kaptaraean" (ruler?) and the allotment of tin to "the interpreter of the Chief Merchant of the Kaptaraeans" stationed at Ugarit.[341] Other Mariot tablets contain abundant references to "Kaptaraean" goods.[342] The equation of cuneiform *Kaptara* and Biblical *Kaptor* with the *kftiw* (Keftiu) of the Egyptian sources, and their interpretation as references to Crete are today widely accepted.[343] It is hard to imagine that the presence of Cretans at Ugarit, which at the time was probably a crucial link between the Mediterranean and inland Syro-Mesopotamian trade routes, went by without any interaction with Cyprus, especially given the involvement of metals in these circuits:[344] more or less coeval texts from Mari and Babylon mention, respectively, the import of

[338] See especially Godart and Sacconi (1979: 133), Baurain (1980: 68) and Sherratt (2013) expresses both types of preoccupations, but see also Baurain (1980: 568, citing on the lack of archaeological evidence for contacts between Crete and Cyprus in the period around the emergence of Cypro-Minoan.
[339] Steele (2013: 195, fn. 32); Sherratt (2013: 98).
[340] See Sorensen (2009). B. Davis (2014: 188, fn. 1074) provides a brief summary.
[341] On this tablet see Bardet *et al*. (1984, 528-529; text 556, lns. 28-31), Strange (1980: 90-91; text 33), Villard (1986: 391) and Cline (1994: 126; text D2), cited in Sorensen (2009: 30, 32, fn. 68) and B. Davis (2014: 182).
[342] See Sorensen (2009: 27-33, with refs.) for a comprehensive catalogue of these textual descriptions.
[343] Despite some contrary views (Strange 1980, and Vandersleyen 1988 and 2003, apud B. Davis 2014: 184, 188, fn. 1042), the equation of *Keftiu* with Crete is supported by the evidence from the list of Aegean place-names in the Egyptian inscription of Kom el-Hetan (Duhoux 2008: 30-32; Cline and Stannish 2011: 7; B. Davis 2014: 182-184, fn. 1042).
[344] J. Karageorghis (1958: 10-16) and Godart and Sacconi (1979) defended that Cypro-Minoan was introduced to Cyprus from Syria. However, it must be noticed that the attestation of Cypriot texts at Ugarit ca. 1325-1190 BCE does not automatically demonstrate the use of the script in coastal Syria centuries earlier.

"mountain copper" and "refined copper" from Alasiya. At the same time, the archaeological evidence of Cretan-Cypriot contacts intensifies during the Neopalatial period (1700-1425 BCE) period,[345] which is when we would expect Linear A to have inspired the creation of Cypro-Minoan. Citing Portugali and Knapp, Ferrara reports a not insignificant number of Aegean objects found at Cypriot sites, and vice-versa, for the time-span between the MC III and the LC I, i.e. 1750-1425 BCE.[346] The material expression of Aegean-Cypriot interactions during the period in question is an intricate archaeological problem and involves other questions (such as the nature of the eastern Mediterranean copper trade) which cannot be treated adequately here. But to what extent the archeological data represent or misrepresent the reality of interregional maritime exchanges around the mid-2nd millennium BCE is not easy to determine, and it should not be a factor for dismissing a Crete-to-Cyprus script transmission.

Yet the problem with the contextual concerns is of an even more basic nature: they focus on external circumstances,[347] of which our perception depends to a large extent on skewed archaeological data, and neglect that the *main* factor for establishing the affinities of a script should be its formal and structural features. Even with the limitations of the Cypro-Minoan corpus, these are much more tangible: *none* of the attested writing systems of the Eastern Mediterranean and Southwest Asia that were, or may have been, known to Cypriots between 1700 and 1400 BCE constitute as suitable a comparandum as Linear A. The Mesopotamian cuneiform logo-syllabary, the Ugaritic (cuneiform) and Proto-Canaanite ("linear") consonantal alphabets, Egyptian hieroglyphic, the Byblos script and Anatolian hieroglyphic all fail to show systematic structural affinities with Cypro-Minoan. Conversely, Linear A offers counterparts to Cypriot signs that are simultaneously *formal* and *phonological*, and therefore unlikely to be accidental (see Table 3.1). The default hypothesis ought to be that Linear A provided the template for Cypro-Minoan. Bombardieri and Jasink even suggest that Cypro-Minoan is not a derivative script, but an admixture of "adoptions from Cretan scripts", "reinterpretations of Cypriote linear decorative motifs" and "'new symbols' of a possible local origin'",[348] but why would the Bronze Age Cypriots go through this process of cherry-picking mostly non-phonetic elements only to end up producing a script that is even more phonographic than Linear A or Linear B?

Thus, the alternatives to the view that Cypro-Minoan descends from Linear A make uneconomical arguments by concentrating on the absence of evidence and ignoring potential positive evidence. Somewhat ironically, up to now these objections have never actually been accompanied by an evaluation of their proximity of the two scripts by means of a thorough comparative-paleographical analysis. It is true that this

[345] Sorensen (2009: 22).
[346] Portugali and Knapp (1985: 46), apud *CMI* I: 57. See also Sørensen (2008).
[347] Recently, Sherratt (2013) expresses both types of preoccupations, but see also Baurain (1980: 568, citing Godart and Sacconi 1979: 133) on the lack of archaeological evidence for contacts between Crete and Cyprus in the period around the emergence of Cypro-Minoan.
[348] Bombardieri and Jasink (2010).

was understandable when no comprehensive collection of inscriptions was available, but now we are in the position to fill this lacuna.

3.2.2.2 The evidence of early Cypro-Minoan inscriptions

In Chapter 1 we have seen that 1525-1425 BCE is the *terminus ante quem* for the appearance of Cypro-Minoan, but that the vague chronology of some inscriptions merely ascribed to the Late Bronze Age makes it at least possible that the script was already in use toward the end of the MC III period (ca. 1650 BCE). This is the most we can approximate the date of the script's inception.

It goes without saying that the earliest Cypro-Minoan inscriptions, closer in time as they are to the introduction of writing in Cyprus, are probably the ones featuring a signary closer to Linear A, if this was indeed the script's model. The two documents that have concern for us are ENKO Atab 001 and Apes 001, discussed in see 1.2.4 concerning their archaeological context and chronology. Notice that at present they are classed differently: ENKO Atab 001 is the sole member of Olivier's new "CM 0" category and is considered by the author the representative of a separate script-branch; ENKO Apes 001 is categorized as Cypro-Minoan proper, namely as part of CM 1. The survey that follows begins with the former.

ENKO Atab 001 is a fragment of clay tablet measuring 7.7 x [5.8] x 3.5 cm (Figure 3.1) which preserved three lines of text with ruling.[349] A full physical description of the inscription is available in *HoChyMin* and *CMI* II,[350] and there is also a recent in-depth study by Duhoux,[351] so here I describe only the features relevant for our purposes. ENKO Atab 001 is comparable with the Aegean type of "page-shaped" tablets (i.e. tablets with flattened faces and edges), especially some examples from Neopalatial Crete that have similar measures and also use ruling.[352] It contains 23 signs inscribed in *scriptio continua*, whose height is 0.7-1 cm.[353] The first two signs on the right edge of the first line also appear inscribed, in the same order, at the right edge of the tablet, suggesting they might function as a sort of title with archiving purposes.[354] This repeated sequence and the orientation of certain sign shapes imply that the

[349] These are the measures given in *HoChyMin*. In the literature (Dikaios 1956: 41; É. Masson 1969: 65; Godart and Sacconi 1979: 129; Palaima 1989a: 136; *CMI* II: 13) they vary slightly.
[350] *HoChyMin*: 60; *CMI II*, 13-14 and 127.
[351] Duhoux (2009a).
[352] É. Masson (1969: 66), Palaima (1989a: 136) and Duhoux (2009a: 25-26, n. 97). Specifically, one can compare the following Linear A tablets: PH 8 (Phaistos) — MM II; measures: [3.2] x [4.7] x 1; ruling: yes; edge uninscribed; PK 1 (Palaikastro) — probably LM IA (Weingarten 1990: 109, n. 29; but see Vandebanbeele 1985: 12); measures: 6.8 x 10.2 x 1.5; ruling: yes; edge inscribed: yes (one sign); and TY 3 (Tylisos) — LM IB; measures: 9 x 12 x 1.2; ruling: yes; edge inscribed.
[353] *HoChyMin*: 60. Differently, É. Masson (1970: 66) and Palaima (1989a: 137), who autopsied the tablet, report 0.8-1.2 cm.
[354] Duhoux (2009a: 10): "The writing of 𐄁 on the right edge suggests that the tablet was normally standing vertically with its right edge probably facing the centre of the room." A similar feature has been reported for one of the newly-found, unpublished 13th-century BCE tablets from Pyla-Kokkinokremos (see 1.2.2).

inscription is written in *boustrophedon*,[355] although Duhoux maintains the opposite view.[356] The repeated signs on the top of the right edge suggest that the first line is to be read from right to left. This is further supported by the last sign of line 01 (𐄩), which resembles LA 60/*ra*[?] and CM 87 (𐄧) but is oriented leftwards; such orientation is rare in the Linear A counterpart (𐄧) and unseen in CM 87. A sinistroverse reading direction can also be surmised for l. 03, where sign CM0 18 again matches both LA 01/*da* (𐄀) and CM 04 (𐄀), but with an unusual leftwards orientation (𐄁). Conversely, in l. 02, sign CM0 14 (𐄃), equal to LA 09/*se*[?] (𐄃) and CM 44 (𐄃), appears to be oriented rightwards.[357] These three points suggest that ENKO Atab 001 was written in *boustrophedon*.

Figure 3.1: Photograph of the inscribed sides of clay tablet ENKO Atab 001 (courtesy of S. Ferrara).

The most substantial issue with the edition of ENKO Atab 001 concerns the interpretation of signs no. 10 and 11 in line 02 (see Figure 3.1 and Table 3.10), whose great similarity makes it hard to decide whether they are the same grapheme or two different ones.[358] Duhoux has shown prudence in his analysis and ponders both possibilities.[359] I will take his stance as a starting point, but see below for a hypothesis that they represent distinct signs. Thus, the 23 signs of ENKO Atab 001 represent a signary of 20 *or* 21 individual graphemes (see Table 3.10).

[355] See Ventris (1956) and Janko (1987).
[356] Duhoux (2009a: 22-25)
[357] Ventris (1956: 41).
[358] É. Masson (1969: 66, 68); Palaima (1989a: 138)
[359] Duhoux (2009a).

Table 3.10: The signary of ENKO Atab 001.[360]

										
01	02	03	04	05	06	07	08	09	10	11
										
12	13	14	15	16	17	18	19	20	21	

Scholars have different views on what the signary of ENKO Atab 001 represents. We have seen that É. Masson saw it as an example of the first indigenous Cypriot writing, one very similar to Linear A, whereas Olivier, who made the tablet the single member of a CM 0 subcorpus, claims that its script cannot be the ancestor of the later Cypro-Minoan *ones* and must be a "dead branch" in the evolution of Aegean writing in Cyprus.[361] Duhoux has expressed on different occasions the view that significant percentages of the 20/21 signs of CM 0 differ from Linear A and CM 1.[362] In the opinion of Godart and Sacconi, only three signs are surely identical to Linear A ones.[363] Quite differently, Palaima argues that for "17 of the 20 potentially distinctive signs, one can propose parallel signs in Linear A", and underlines that this number is "convincingly high for so brief a text".[364] However, the debate has never been accompanied with, or founded on, an actual assessment of the formal affinity between the signs of our tablet and those of Linear A and remaining Cypro-Minoan by means of a systematic comparative-paleographical analysis.[365] This was understandable when comprehensive collections of Linear A and Cypro-Minoan inscriptions were not available, but now we are in the position to fill this lacuna.

A single inscription, very short, fragmentary and chronologically isolated as is ENKO Atab 001, can hardly constitute decisive evidence for any theory regarding the relationship between Linear A and Cypro-Minoan. Yet if its signs demonstrate considerable similarities to both scripts, it certainly cannot be a refutation of the hypothesis that Cypro-Minoan derives directly from Linear A. Hence, my goal is to analyze the signary of ENKO Atab 001 and determine how similar it is to the signs of the two systems. If the tablet's script is just an early form of Cypro-Minoan, and the latter was modeled on Linear A, then its signs ought to be formally close to both.

[360] Drawings by the author based on the photographs in *HoChyMin* and *CMI* II.
[361] *HoChyMin*: 21 and Olivier (2013: 9).
[362] Duhoux (2009a: 31; 2013: 30).
[363] Godart and Sacconi (1979: 131-132).
[364] Palaima (1989a: 137-138).
[365] In her original study of ENKO Atab 001, É. Masson (1969) did compare the tablet's signs to those of the two scripts abovementioned, but either Linear A signs were cited generically or the reader was referred to the tables of Brice (1961). At the time the palaeographical charts of *GORILA* were not available.

Palaima's well-justified methodological warning that one should not compare signs of different scripts based on *standardized* forms found in *normalized* sign tables, but rely on signs *as they appear on the inscriptions*,[366] will be taken into account. Since the earliest Cypro-Minoan inscriptions are likely to contain the forms that are closest to the system's model, I attempt to use the oldest known examples of each parallel. Finally, and although I have doubts about its usefulness, I use the label "CM 0" to refer to the signs of ENKO Atab 001 for the sake of simplicity: thus, "CM0 01" means the first sign of the tablet, and so on. The Linear A comparanda are the signs as drawn in *GORILA*. For Cypro-Minoan I follow the general method of this thesis: when possible, I have made my own drawings based on the published photographs; otherwise, the most adequate drawings found in the published editions are used. It should be noted that this exercise is made in anticipation of the full comparative analysis between Linear A and Cypro-Minoan in 3.4, so some comparisons made in the following paragraphs will not be repeated in that section.

CM0 01 (Table 3.11) matches closely LA 60/*ra*[?] and CM 87. It is oriented leftwards, which never happens with CM 87 but occurs twice with LA 60, namely in tablets from Phaistos and Malia (PH 2 and MA 2). This may have to do with ENKO Atab 001 being written in *boustrophedon* instead of being a trait common to one or the other script. Probably due to epigraphical constraints, on some occasions Cypro-Minoan allows for a "stemmed" version of 87 (e.g. KALA Arou 001 and KATY Avas 003), which for LA 60/*ra*[?] is very rare (but see SY Za 6).

Table 3.11: Comparison of LA 60/*ra*[?], CM0 01, and CM 87.

LA 60/*ra*[?]			**CM0 01**	**CM 87**	
					
PH 2.1	MA 2a.1	SY Za 6		ENKO Arou 001.01	HALA Psce 001
					
KN Zf 31	ZA 7a.2	HT Wc 3012a		KATY Avas 003	KALA Arou 001.03

CM0 02 (Table 3.12) is comparable to LA 08/*a* and CM 102. In Cypro-Minoan, the CM 2 version of 102 is very close to CM0 02, but later variants such as those in the clay balls are perhaps even more alike. This may owe to similar epigraphical constraints (e.g. the use of thin styli on clay) and warns us that we should not always expect perfect

[366] Palaima (1989a: 140, 150).

matches for the signs of ENKO Atab 001. In fact, there are Linear A and later Cypro-Minoan forms much more similar to each other (e.g. LA 08 in KN Zb 5 and Zc 6 contrasted with CM 102 in KATY Avas 002) than to CM0 02. This may be interpreted as an indication that the signs of ENKO Atab 001 represent a divergent branch of an Aegean script (Olivier's proposal), but it is as likely that they had their own range of paleographical variation, depending on epigraphical factors, and that, should we have more documents from this period, we would possibly find examples of CM0 02 resembling closer both scripts.

Table 3.12: Comparison of LA 08/*a*, CM0 02, and CM 102.

LA 08/*a*			**CM0 02**	**CM 102**	
 KN Zb 5	 KN Zc 6.2	 KN Zc 7		 CYPR? Psce 003	 KALA Arou 001.14
 ARKH 1.2	 ARKH 4a.2	 KH 9.1		 KATY Avas 002	 ENKO Atab 003.A.02

CM0 03 (Table 3.13): Although we cannot entire rule out equating this sign with CM0 18 (), it appears the two are sufficiently distinct (see Table 3.10). The best comparanda are LA 31/*sa* and CM 82, but the schematic shape of the sign makes it impossible to choose one as more identical than the other.

Table 3.13: Comparison of LA 31/*sa*[??], CM0 03, and CM 82.

LA 31/*sa*[??]		**CM0 03**	**CM 82**	
 KH 6.6	 KN Za 10.a		 ENKO Apes 001	 ENKO Arou 001.02
 HT 100.4	 HT 125a.4		 CYPR? Psce 001	 KALA Arou 001.07

In theory, LA 05/*to*[?] and 06/*na* can both match CM0 04 (Table 3.14), but in Cyprus, later, only CM 08 provides a suitable match. The most promising of the two Aegean candidates is a priori LA 05/*to*[?] because its vertical stroke always connects with both horizontal strokes (like CM0 04) on the upper part, and is never split. However,

CM 08 exhibits a wider range of variation and uses optionally traits that in Linear A are diagnostic of one or the other sign. For this reason, and because CM0 04 is a very schematic shape, we cannot decide which comparandum is the closest.

Table 3.14: Comparison of LA 05/*to*? and 06/*na*, CM0 04, and CM 08.

LA 05/*to*?		**LA 06/*na***		**CM0 04**	**CM 08**	
						
ARKH 2.2	KO Zf 2	KN Zc 7.2	KH 36.2		ENKO Arou 001.04	KOUR Psce 001
						
PK Za 16	ZA 4a.2	ZA 9.4	HT 23a.1		PYLA Mlin 001	RASH Atab 004.A.10

For CM0 05 (Table 3.10) there is no obvious cognate in Linear A and possible comparisons, e.g. with CM 55 (), 60 () or 91 (), would be speculative.

CM0 06 (Table Table 3.15) resembles closely LA 54/*wa* (also used logographically for ‘cloth’ and transcribed as TELA) and CM 95. The Linear A sign consists of a rectangular shape from whose lower side three or more vertical strokes can descend, but CM0 06 and CM 95 match the three-legged variant that is attested in LM IB inscriptions from different Cretan sites. CM0 06 is therefore the expected “midway” between the Linear A and Cypro-Minoan forms.

Table 3.15: Comparison between LA 54/*wa*, CM0 06 and CM 95.

LA 54/*wa*		**CM0 06**	**CM 95**
			
ARKH 2.5	HT 86a.3		RASH Atab 004.A.11
			
HT Wc 3007	ZA 10b.1		ENKO Atab 003.A.10

CM0 07 (Table 3.16) matches LA 02/*ro*? and CM 05, but given its schematic design it cannot be said to be closer to any of the two.

Table 3.16: Comparison between LA 02/*ro*, CM0 07 and CM 05.

LA 02/*ro*?	**CM0 07**	**CM 05**
 HT 9a.6		 ENKO Apes 001
 ZA 15b.2		 ENKO Atab 003.A.10

CM0 08 fully matches later CM 69, but has no direct equivalent in Linear A (Table 3.17).

Table 3.17: Comparison between CM0 08 and CM 69.

CM0 08	**CM 69**
	 ENKO Arou 001.01
	 PARA Psce 001

Still, there are two Linear A syllabograms that bear some resemblance to it: LA 56/$pa_3^{??}$ and 57/*ja* (Table 3.18). LA 56/$pa_3^{??}$ is drawn as a rectangle split in two halves by a central horizontal stroke, like CM 69, except that it is shaped like a ladder (the lateral strokes are extended beyond its upper and lower edges). 57/*ja* is a plain rectangle divided into three parts, although in at least one instance (IO Za 3) its lateral strokes have been prolonged as well. Since the shape of LA 56/$pa_3^{??}$ is also divided into three portions least once, we can deduce that what distinguished it from 57/*ja* was the ladder-like shape, regardless of the number of horizontal strokes. This suggests that CM0 08 and CM 69 derive from LA 57/*ja*, which is simply a divided rectangle.

The question of which Linear A sign best compares to CM0 08 and CM 69 is additionally complicated by the prospect that forms CM 69 (𐄙) and the CM 72 of CM 1 (𐄘) represent the same grapheme, as proposed in 2.3.15. In this scenario, one might expect CM 69/72 to derive from LA 57/*ja* (𐄗), with 𐄘, not 𐄙, as its earliest variant. Yet what we find in ENKO Atab 001 is already 𐄚.

Table 3.18: Diagnostic traits of Linear A signs 56/*pa*$_2^{??}$ and 57/*ja*.

56/*pa*$_3^{??}$	 HT 8a.1	 AP Za 2.1
57/*ja*	 HT 7a.2	 IO Za 3

CM0 09 (Table 3.19) matches closely CM 25 and some variants of LA 77/*ka*$^{??}$. The latter usually looks like a circle divided into four similar parts (i.e. a four-spoke wheel), but the ductus of some instances from LM IB Agia Triada, particularly on nodules, tends to leave the circle unclosed at the lower edge of the sign. It can be suggested that this was the form borrowed into Cyprus and that, judging from CM0 09 and CM 25, from then on there was an increasing propensity to open the sign at its lower edge. From this perspective, CM0 09 is a plausible intermediate form.

Table 3.19: Comparison between LA 77/*ka*$^{??}$, CM0 09 and CM 25.

LA 77/*ka*$^{??}$		**CM0 09**	**CM 25**	
 HT 49b.4	 HT Wa 1028.γ		 CYPR? Psce 001	 ENKO Arou 001.14
 HT Wa 1349	 HT Wa 1368		 KALA Arou 004.02	 RASH Atab 004.A.04

CM0 10 and 11 (Table 3.10) are very similar: the upper part of both comprises two parallel curved strokes placed on the top of a vertical one. Their ductus has two main differences: 1) the upper strokes of CM0 10 are much more curved and have a sub-circular form, while those of CM0 11 are more open and make the sign look like an arrow; 2) in CM0 10 the vertical stroke barely enters the sub-circular structure and is mostly limited to the lower portion of the sign, but in CM0 11 it almost touches the two arching strokes at the top. But are these differences intentional?

If we assume for the sake of argument that these are diagnostic traits and that CM0 10 and 11 are separate graphemes, then we can compare each with different Linear A and Cypro-Minoan signs. CM0 10 resembles the variants of LA 26/*ru*$^{??}$ () in which the upper curved strokes are more closed and could be the antecedent of CM 28

(𐄁), reflecting the progressive closing of its upper portion (Table 3.20). It is true that most examples of CM 28 look like an arrow, but the early example (if not the earliest) in RASH Atab 004 is still somewhat open, and since the sign is fairly rare, its paleographical variation may not be well represented.

Table 3.20: Comparison between LA 26/*ru*[??], CM0 10 and CM 28.

LA 26/*ru*[??]		**CM0 10**	**CM 28**	
				
PH 2.3	ARKH 2.6		RASH Atab 004.A.05	KITI Avas 003
				
HT 86a.2	MI Zb 1		KITI Avas 005	ENKO Atab 003.A.03

In theory, CM0 11 looks enough like an arrow to be comparable to CM 28 as well. However, since its vertical stroke reaches almost the top of the shape, we can rather compare it to LA 27/*re*[??] (𐄅), which, as a rule, has its vertical stroke extended to its upper portion and curved strokes that are less slightly less curved. Assuming, then, that CM0 11 is not related to CM 28 (< CM0 10?), what other Cypro-Minoan sign is there for comparison? Taking into account its variants in KALA Arou 001 and ENKO Atab 003 (Table 3.21), I propose as a working hypothesis that CM 24 (𐄃) is derived from LA 27/*re*[??] (𐄅) with CM0 11 as the intermediate form.

Table 3.21: Comparison between LA 27/*re*[??], CM0 11, and CM 24.

LA 27/*re*[??]		**CM0 11**	**CM 24**	
				
PH 15a	AP Za 2.2		ENKO Arou 001.06	KALA Arou 001.01
				
HT 17.3	HT Zb 160		KALA Arou 004.01	ENKO Atab 003.A.01

Notice that CM 24 as it is has no recognizable equivalent in Linear A. Although it possesses two vertical strokes (𐄃), not just one, my suggestion is that this may have been a modification prompted by a need to distinguish 𐄁 from 𐄀 (see Table 3.22), as

well as from the arrow-like CM0 15 (𐄩). This hypothesis will be further discussed in 3.4.5.

Table 3.22: Hypothetical evolution from LA 27/*re*[??] and 26/*ru*[??] to CM 28 and 24.

 LA 27/*re*[??]	→	 CM0 10	→	 CM 28
 LA 26/*ru*[??]	→	 CM0 11	→	 CM 24

CM0 12 (Table 3.23) is comparable to LA 55/*nu*[??] and CM 68. However, it resembles most the variants of LA 55 in which the two central horizontal strokes are curved; the corresponding strokes in CM 68 are less curving and therefore closer to other variants of the Linear A sign. Once more, I underline the possibility that the script of ENKO Atab 001 had a higher paleographical variation than we can see, whereby CM0 12 had less curving variants matching CM 68 closer.

Table 3.23: Comparison between LA 55/*nu*[??], CM0 12, and CM 68.

LA 55/*nu*[??]		**CM0 12**	**CM 68**
 KN Za 10.a	 KH 88.1		 ENKO Atab 003.A.15
 ZA 5b.1	 IO Za 2b.2		

CM0 13 (Table 3.24) matches closely LA 04/*te*[?] and CM 07. However, with LA 04 the number of horizontal strokes on each side of the vertical line is normally three or four, which is also the number of horizontal strokes in the rare attestations of CM 07. Differently, CM0 13 has a series of six horizontal lines on each side of the vertical stroke, making its closest match one instance of LA 04 in HT Wa 1140 (dated to the LM IB period), which has five such strokes. This is yet another case where the CM 0 form shows divergence regarding both comparanda, leaving us with two possibilities: its script is either a dead branch with no continuation in Cypro-Minoan, or it displayed much more paleographical variation than we are given to see.

Table 3.24: Comparison between LA 04/*te*?, CM0 13, and CM 07.

LA 04/*te*?		**CM0 13**	**CM 07**
 PH 15a	 HT Wa 1140		 ENKO Arou 001.03
 HT Wa 1141	 KO Za 1.d		 RASH Atab 003

CM0 14 matches in equal measure both LA 09/*se*? and CM 44 (Table 3.25).

Table 3.25: Comparison between LA 09/*se*?, CM0 14, and CM 44.

LA 09/*se*?		**CM0 14**	**CM 44**	
 ARKH 2.3	 HT Zb 159		 ENKO Arou 001.14	 MARO Avas 001
 ZA 14.3	 ZA 15a.4		 PARA Psce 001	 ENKO Atab 003.A.02

CM0 15 equates with LA 37/*ti* and CM 23 (Table 3.26).

Table 3.26: Comparison between LA 37/*ti*, CM0 15, and CM 23.

LA 37/*ti*		**CM0 15**	**CM 23**	
 PK 1	 KN Zc 6		 CYPR? Psce 006	 ENKO Arou 001.01
 PL Zf 1	 ARKH 4a.4		 KOUR Psce 001	 CYPR? Psce 001

CM0 16 (Table 3.27) is close to the rare CM 67 and even closer to the "stem-less" variants of LA 30/*ni*? (also used as the logogram FIC or 'figs'). LA 30 is normally

structured from a Y-shape, with strokes (usually two) crossing each of the upper stripes in an X-like manner (𐘀). However, CM0 16 resembles much more the "stem-less" version, based on a V-like shape. It is unsurprising that the most similar parallel in Cypro-Minoan is one early instance of CM 67 on CYPR? Psce 004, a cylinder seal dated to 1400-1325 BCE. This also squares well with the *possibility* that the ductus of CM0 16 > CM 67 evolved throughout the lifetime of the script and took different forms that É. Masson and Olivier list as separate signs (e.g. CM 65 = 𐘑 or 99 = 𐘟).

Table 3.27: Comparison between LA 30/*ni*[?], CM0 16, and CM 67.

LA 30/*ni*[?]		**CM0 16**	**CM 67**
PH 16a.2	KH Zb 98		CYPR Psce 004
HT 102.2	HT 114a.3		ENKO Abou 046

CM0 17 (Table 3.28) is similar to some variants of LA 79/*zu*[??] (𐘞) but has no obvious counterpart in later Cypro-Minoan. Often, the Linear A character resembles an Egyptian *ankh* glyph with inner and lateral strokes added to the oval segment, but the older variants seem to be the eye-shaped ones without the "leg" (𐘝). Of these, those found in LM IB texts from different Cretan sites (Arkhanes, Agia Triada and Zakros) are very similar to CM0 17,[367] especially the example in HT 99.

Table 3.28: Comparison between LA 79/*zu*[??] and CM0 17.

LA 79/*zu*[??]		**CM0 17**
HT 97a.5	HT 99b.1	
HT Wc 3012a	ZA 4a.5	

[367] See Palaima (1989a: 136) for a similar view.

CM0 18 (Table 3.29) fully equates with LA 01/*da* and CM 04, but it is one of those schematic shapes that cannot be said to be closer to any. The fact that it is oriented leftwards, unlike its equivalents in Linear A and Cypro-Minoan, is most probably due to the orientation of the inscription.

Table 3.29: Comparison between LA 01/*da*, CM0 18, and CM 04.

LA 01/*da*	**CM0 18**	**CM 04**	
 HT 95a.2		 ENKO Arou 001.10	 PARA Psce 001
 ZA 5a.3		 CYPR Psce 003	 RASH Atab 004.A.05

CM0 19 (Table 3.30) matches closely LA 38/*e*[?] and CM 38. LA 38 shows some variance and is not always similar to CM0 19 and CM 38, but very close counterparts occur in the Agia Triada texts (LM IB), and outside Crete in the island of Kea (KE Zb 4, dated to the MM III). They consist of an inverted V-shape crossed by two oblique (but nearly horizontal) strokes on each "arm". Similarly, CM 38 is normally an inverted V-shape with two oblique strokes or two dots to each of its sides. It is unclear whether the third stroke on the left side of CM0 19 is part of the sign or accidental, but in any case this does not seem enough to divorce it from its comparanda.

Table 3.30: Comparison between LA 38/*e*[?], CM0 19, and CM 38.

LA 38/*e*[?]		**CM0 19**	**CM 38**	
 KE Zb 4	 HT 23b.3		 KATY Avas 001	 ENKO Arou 001.01
 HT 91.4	 ZA 11b.1		 MARO Avas 001	 RASH Atab 004.A.06

CM0 20 (Table 3.31) bears some resemblance to LA 24/*ne*[??] and CM 02. However, the three forms differ from one another as per the tips of their horizontal strokes ("arms"). LA 24 shows significant variation, as it ranges from specimens fairly pictorial, resembling a handled pitcher ( , ), to variants much more schematic ().

CM0 20 possibly derives from a Minoan variant somewhere in the middle of this spectrum, since its two "arms" end with short vertical strokes at their tips, i.e. they are T-shaped (𐄳). On the other hand, it might well be the antecedant of CM 02, but if this is so then the "arms" were simplified to lateral vertical strokes disconnected from the central vertical line (𐄷) in Cypro-Minoan. If these comparisons are correct, then CM0 20 is as an intermediate form.

Table 3.31: Comparison between LA 24/*ne*[??], CM0 20, and CM 02.

LA 24/*ne*[??]		**CM0 20**	**CM 02**	
				
ARKH 1.2	KH 53		PSIL Asta 001	ENKO Avas 007
				
HT 7b.1	HT 98b.2		RASH Atab 004.A.04	RASH Mvas 001

CM0 21 (Table 3.32) closely matches LA 28/*i* and CM 104. LA 28 normally looks like an open hand (𐄿, 𐅀), but some variants have two vertical strokes instead of just one in the inferior part. The latter would appear to be the antecedents of CM0 21 and CM 104.

Table 3.32: Comparison between LA 28/*i*, CM0 21, and CM 104.

LA 28/*i*		**CM0 21**	**CM 104**	
				
MA 1a	CR(?) Zf 1		ENKO Arou 001.06	KALA Arou 001.01
				
TL Za 1	AR Zf 2		CM 2	RASH Atab 004.A.03

We may now summarize the results of this survey. Seventeen or eighteen out of 20 or 21 signs of ENKO Atab 001 (depending on the interpretation of CM0 10 and 11) can be described as intermediate forms, as they either have exact or near-exact matches in both Linear A and Cypro-Minoan, or shapes that diverge slightly from both, but could be interpreted as the early Cypro-Minoan steps towards the later forms. This

larger group is important on its own: irrespective of the affiliation of ENKO Atab 001, it reflects a very close relationship between Linear A and Cypro-Minoan. As regards the remaining three signs, one has a counterpart in Cypro-Minoan only, one has parallels in Linear A only, and one does not have obvious parallels in either (Table 3.33).

Table 3.33: Assessment of ENKO Atab 001 signs in comparative terms.

Types of form in terms of comparanda	Amount
Intermediate	17 (18)
Cypro-Minoan counterpart only	1
Linear A counterpart only	1
Without safe parallels	1
Total	20 (21)

The intermediate forms are ambiguous (they do not imply a closer relationship to any of the two compared scripts), while the form with a counterpart only in Linear A (CM0 17) and the form without parallels (CM0 05) do not prove that the script of ENKO Atab 001 is not Cypro-Minoan, as implied by Olivier's interpretation. To the best of my knowledge, no long-lived writing system has ever had a stable and monolithic history: some signs can be dropped, modified or added during the lifetime of a script, without the system ceasing to be the same. In addition, we must keep in mind the limitations of the Cypro-Minoan corpus: later counterparts of CM0 05 and CM0 17 may be lacking only because of accidents of preservation. It is much more telling that the tablet uses CM0 08 (𐠨), whose shape matches CM 69 (𐠩). Even if this sign were ultimately derived from LA 57/*ja* (𐘪), its form is already fully Cypriot. To sum up, the script of ENKO Atab 001 is closely related to Linear A, but contains a sign that is characteristic (we might say "diagnostic") of Cypro-Minoan and had a continuation in it. In light of the current evidence, it cannot be considered a "dead-end".

Beyond the paleographical evidence, it is worthwhile making a short note on two epigraphic features. Although we have pointed out that ENKO Atab 001 appears to be written in *boustrophedon*, whereas the preferred (if not rigid) reading direction in both Linear A and Cypro-Minoan is dextroverse, this parameter is hardly diagnostic of script kinship. Likewise, it is a fact that the tablet is very thick (3.5 cm) when compared to its Aegean counterparts (1-1.5 cm),[368] but it is doubtful that such a physical difference in the medium presents a serious obstacle to the Minoan derivation hypothesis.

From a cautious standpoint, ENKO Atab 001 neither demonstrates nor impedes the simplest scenario: that Linear A is the direct ancestor of Cypro-Minoan and the tablet represents just a brief, isolated snapshot of the earliest stages of the Bronze Age Cypriot script. I refer to this as the "simplest scenario" because it does not require

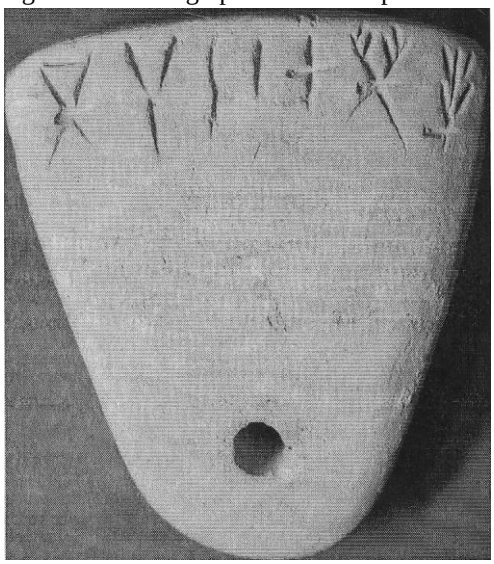
[368] Sherratt (2013: 82, n. 7).

theorizing extra writing systems that are otherwise unattested. On the contrary, the opposing view—that it employs a distinct system, not Linear A anymore, but not Cypro-Minoan proper either—remains possible, but quite dangerous when more texts analogous to ENKO Atab 001 are lacking. As a consequence, I hope this survey demonstrates that, as long as we remain cautious about the results, we are justified in comparing Cypro-Minoan to Linear A.

As a last note, the comparisons above suggest that the closest Linear A matches for the signs of ENKO Atab 001 date to the LM IB period (1480-1425 BCE), but we should not feel tempted to place the import of writing to Cyprus in this phase. Our sample is enormously biased towards it, as over 1000 of the 1,527 Linear A documents (approximately two-thirds) are dated to the end of the LM IB.[369] It is therefore possible that a more chronologically balanced corpus would yield more Linear A analogies for Cypro-Minoan from the MM III and LM IA periods (1700/1650-1480 BCE).

I now turn my attention to the second of the two earliest Cypro-Minoan documents, ENKO Apes 001.

Figure 3.2: Photograph of ENKO Apes 001.[370]



As with ENKO Atab 001, the medium of ENKO Apes 001 is not inconsistent with Aegean writing practices. Thus, Ferrara underlines the similarity to the pierced labels from the Cretan Hieroglyphic deposits at Knossos and Malia,[371] termed "lames" (French for "laminas") in Olivier and Godart's corpus of the script.[372] Perhaps an even more similar type of hieroglyphic document is represented by the so-called medallions:

[369] Bennet (2008: 12). See also Del Freo and Zurbach (2011: 85).
[370] From *HoChyMin*: 118.
[371] Ferrara (*CMI* I: 56, n. 68) also compares ENKO Apes 001 to a label inscribed in Linear A from Phaistos (PH 9), but the latter is more elongated and not perforated, thus being closer to the roughly contemporary class of Linear A "lames" or horizontal tablets and not such a fitting parallel for our Cypriot object.
[372] Olivier and Godart (1996).

these are round clay discs pinched along the top with a perforated tenon.[373] Like its Aegean counterparts, the Cypriot object must have been meant for hanging, probably by means of a string, and being appended to some sort of goods. Thus, ENKO Apes 001 has some potential points in common with the writing practices of MM IIB-III Crete (1750-1600 BCE).[374]

Table 3.34: The signary of ENKO Apes 001.[375]

						
97	82	11	|	05	108	37

All sign shapes are attested in Cypro-Minoan. CM 05, 11, 82 and 97 are of straightforward identification, but the last two signs, read as CM 108 and 64, respectively, by Olivier, need some discussion as regards their identification. The last sign of the inscription consists of one horizontal stroke, topped by a central vertical one with two consecutive oblique strokes on each side. Now, the only instance of sign 64 that has a clear central vertical stroke is the one in the Opheltas' spit (PPAP Mins 001) which, apart from being of late date, most likely is already Cypro-Greek (see analysis in 0). Conversely, all traits of the ENKO Apes 001 sign are diagnostic of CM 37. Form CM 108 is only attested one other time, as 𒋡, on the cylinder seal CYPR? Psce 005. Most likely it is an early variant of CM 107 (𒋢) (see 2.3.21). All in all, forms CM 11, 37 or 64, 97 and 108 are diagnostic of Cypro-Minoan and have no obvious counterparts in Linear A, which confirms we are dealing with Cypro-Minoan proper. However, since the inscription contains only six signs that are either Cypriot innovations or ambivalent schematic forms (e.g.  is identical with both LA 31/*sa* and CM 82), the proximity of its signary to Linear A cannot be properly assessed.

A propos of writing practices, I would like to conclude with an observation concerning a possible shift of purpose in the borrowing of Linear A into Cyprus, as well as the causes of the essentially phonographic nature of Cypro-Minoan. The corpus available to us attests to whole numbers (see 2.3.22), but lacks fractions and primary logograms (i.e. signs whose logographic function is original, not phonograms used secondarily as logograms e.g. through abbreviation). There are two hypotheses as to why this is so, depending on how faithfully the epigraphic evidence reflects reality. The first is that Cypro-Minoan originally did preserve these components of its Aegean template, but they are "invisible" because they became obsolete after being used in an

[373] Schoep (1999: 266). Cf. in particular the series of medallions KN He from Knossos and MA/M He (09) 01 from Quartier Mu at Malia (Olivier and Godart 1996: 86-97, 136-137).
[374] The chronology of the epigraphic parallels mentioned in the previous footnote is problematic, as it is debated whether their contexts (the "hieroglyphic deposits" of Knossos and Quartier Mu at Malia) date to the end of MM IIB or the MM III (Olivier and Godart 1996: 27-28).
[375] Drawings by the author based on the photograph in *HoChyMin*.

initial stage of the script for which we have very limited evidence (e.g. up to 1400-1300 BCE). The second hypothesis is the absence is real and Cypro-Minoan was devised when Cypriots interacted with a form of Linear A that did not use logograms and fractions extensively (or at all), possibly in a "non-palatial" context. Palaima reminds us that texts without logograms or with restricted uses of logograms are common in Linear A non-administrative classes of documents.[376]

3.2.3 The sounds of Linear A: knowns and unknowns

3.2.3.1 Davis' investigation of Minoan phonology

Davis has revisited Linear A inscriptions and their underlying language in a work that includes a study of Minoan phonology.[377] He is hardly the first to have endeavored to uncover the sounds underlying Linear A syllabograms, but his work contains the first attempt to reconstruct the Minoan phonological inventory systematically and drawing on language and writing systems universals.

Ventris and Chadwick warned that an extensive process of sign redeployment and radical changes might have taken place when Linear A script was adapted to the Mycenaean Greek language, resulting in the script known as Linear B.[378] Steele has very recently reproduced these warnings regarding Davis' approach, stating that "[m]any treatments that claim a systematic understand of the values of Linear A signs could also contain systematic inaccuracies caused by such as phenomenon", and therefore she believes it is "impossible to judge the accuracy of Davis' suggestions".[379] Such warnings should not be ignored, but, as we have seen, there are ways in which the validity of the Linear A sound values can indeed be tested (3.2.1). This is so where a particular Linear A sign matches one of Linear B and, at the same time, occurs in pairs of Linear A > B matching sequences. Thus, LA *pa$_3$* is not only matched by LB *pa$_3$* = /p^{h}a/ paleographically, it also conveys a Minoan sound that must have been rendered in Greek as /p^{h}a/, as suggested by the adaptation of LA *ku-pa$_3$-na-tu*, a non-Greek personal name, as LB *ka-pa$_3$-na-to*. The implication is that the hypotheses of Davis, or any others, can *to some extent* be judged.

The consonantal system which Davis proposes for the language behind Linear A (henceforward Minoan) is synthesized in Table 3.35 in correlation with its syllabographic series. This table does not include the vocalic phonemes because Davis is less specific regarding the phonemes concealed by vowel-signs: *a, e, i, o* and *u*. His only hypotheses are: 1) *e* and *o* may be the reflexes of monophtongized diphthongs [ai]

[376] Palaima (1989b: 41).
[377] B. Davis (2014).
[378] *DocMyc*^{2}: 37.
[379] Steele (2014: 194).

and [au] as a consequence of suffixation (i.e. they are morphophonemic); 2) unstressed /u/ (represented by *u*) may be realized as [ə] before a labial consonant.[380]

Table 3.35: Set of hypotheses by Davis (2014) interpreting the consonantal sounds underlying Linear A syllabograms.

Syllabic series	Underlying phoneme	Spoken allophones	Syllabic series	Underlying phoneme	Spoken allophones
d	/θ/	[θ, ð]	*s*	/s/	[ʃ, ʒ$^{(?)}$]
j	/j/	[j]	*t*	/t/	[t, t^{h}, d]
k	/k/	[k, k^{h}, g]	*w*	/w/	[w]
m	/m/	[m]	*z*	/ʧ/	[ʧ, ʤ$^{(?)}$]
n	/n/	[n]	p_2	/ɸ/	[β, ɸ]
p	/p/	[p, p^{h}, b]	r_2	/l^{j}/, /r^{j}/	[l^{j}], [r^{j}]
q	/k^{w}/	[k^{w}, k$^{wh(?)}$, g^{w}]	t_2	/t^{j}/	[t^{j}, t$^{hj(?)}$, d$^{j(?)}$]
r	/l/, /r/	[l], [r]	*nw*	/n^{w}/	[n^{w}]

Central to Davis' scheme is the argument that Minoan possessed *unmarked* voiceless stops /t, p, k/ which were voiced or aspirated only at the allophonic level. According to the author this is demonstrated by the "use in LB of the same signs for voiced, voiceless and aspirated stops", with the exception of the voiced *d* series alongside voiceless *t*, and "the apparent lack of separate signs for voiced and aspirated stops in LA".[381] According to Davis, the LA *d* series, which in Linear B transcribes /d/, would not represent a stop, but a dental fricative /θ/ with a voiced allophone [ð]. The gist of this idea is not wholly new, as Ventris and Chadwick themselves noticed, with much caution, that the voiced/unvoiced and aspirated/unaspirated oppositions of the stops appear to be absent from the Minoan phonological system. In their opinion, the voicing distinction of LB *d* ~ *t* was unlikely to have a direct correlate in Minoan, and so they assumed the original Minoan sounds differed instead as per the *place of articulation*; afterwards, because this distinction was useless in Greek, the Mycenaeans replaced it with one of voicing.[382]

In this way, Davis interprets a significant portion of the Linear A sound values based on the notion that, except for the coronal series, Linear B represented Greek stops with signs *unmarked for voicing and aspiration*. This view is universally endorsed in the specialist literature, not least by Ventris and Chadwick themselves. It is founded on the premise that the labial (*p*), velar (*k*) and labiovelar (*q*) series of Linear B behave symmetrically, i.e. each represents a Greek voiceless stop but also its aspirated and voiced counterparts: *p* = /p, p^{h}, b/, *k* = /k, k^{h}, g/ and *q* = /k^{w}, k^{wh}, g^{w}/. However, a closer

[380] B. Davis (2014: 240-243).
[381] B. Davis (2014: 193).
[382] *DocMyc*^{2}: 69-70.

look at the structure of the Mycenaean syllabary reveals asymmetries in the arrangement of the stop series that go beyond the coronals. That reassessment is undertaken in the following section.

3.2.3.2 A different approach to the sounds of Linear A

The following treatment of the values Linear A syllabograms and their phonological interpretation is less ambitious, as its aim are more general descriptions in terms of broad articulatory features: e.g. obstruent vs. continuant, stop vs. fricative, voiced vs. voiceless, etc.

3.2.3.2.1 The Linear A stop series and their adaptation in Linear B

3.2.3.2.1.1 The value and distribution of the stop series in Linear B

It is by now abundantly clear that the main difference between LB *t* and *d* is one of voicing. In addition, both series were very productive and used extensively in "native" Greek words. As we will see, this behavior is distinct from that of the *p*, p_2, *k*, and *q* series, when considered as a whole.

It is a crucial point that LB *p* transcribes primarily the voiceless stops /p/ and /p^h/. In the literature, descriptions of the phonological system of Mycenaean Greek routinely include a phoneme /b/,[383] but they overlook the fact that there are no uncontroversial examples of phonemic /b/ in native Mycenaean words. In a study that is insightful but rarely cited, Thompson has demonstrated that this lack of /b/ in Mycenaean is clear and well-justified.[384] It it is tied to the long-established absence or near-absence of **b* in reconstructed Proto-Indo-European,[385] whose effects are still seen in the Greek dialects of the 1st millennium, where β = /b/ does not derive from PIE **b*, but from four other sources:

(1) Proto-Greek voiced labiovelar **g*^{w} (except in certain positions and depending on the dialect);
(2) Proto-Greek **mr* and **ml* sequences:
    (2.1) Fortition *m* > *b* in initial position (e.g **mr̥tós* > βροτός 'mortal'; **mlit-jō* > βλίττω 'take honey', cognate with μέλι 'honey');
    (2.2) Epenthesis *m* > μβ in medial position (e.g. **n̥-mr̥tós* > ἄμβροτος);

[383] See, for example, the recent description in Miller (2013).
[384] Thompson (2005).
[385] Pedersen (1951: 10-16). See also Mayrhofer (1986: 99-100) and Gamkrelidze and Ivanov (1995: 6-7). The sound appears in only a dozen reconstructed roots, none of which is unproblematic: they are confined to specific branches of Indo-European (often Italic, Germanic and Greek), they may be later loanwords into some daughter languages, or they represent types of words prone to polygenesis, such as nursery words and onomatopoeiae.

(3) Loanwords, especially after /b/ had become phonemic.
(4) Nursery and onomatopoeic words, e.g. βαβάζω ‘speak inarticulately, or shout’, βάρβαρος ‘Barbarian (stammerer?)’, and βῆ ‘the cry of the sheep’.[386]

What was the status of these sounds in Mycenaean? The Proto-Greek labiovelar *g^w remained unchanged (cf. e.g. *qa-si-re-u* /g^wasileús/ vs. Attic βασιλεύς). As regards the sequences **mr* and **ml*, there is circumstantial evidence that the epenthesis **mr-* > [-mbr]- had already taken place,[387] but there is no uncontroversial indication of a shift of word-initial **mr-* to [br-].[388] Crucially, even if future epigraphic finds confirm that both phonological changes had already occurred in Mycenaean Greek, it might still be the case that the distribution of the new [b], being predictable and negligible, would not generate many constrating minimal pairs.[389] In other words, [b] would possibly behave as an allophone and continue to be spelled with the *m* series. The subject of loanwords as a possible source for a marginal [b] in Mycenaean constitutes shakier ground, but, as we will see below, has important ramifications for the value of the p_2 series. As Thompson notes, the status of “loan sounds” crosslinguistically is controversial because they can be ably replicated by a part of the community of speakers, but others might substitute the foreign sound with the closest native equivalent.[390] The much-cited example of the English pronunciations of the German name *Bach* [Bach] or the Scottish word *loch* [lox] ‘lake’ is appropriate: some speakers are able to reproduce the foreign fricative [x], but the majority will replace it with the native stop [k].[391] Finally, we have no evidence for nursery or onomatopoeic words that might containg [b] in Mycenaean, given the restricted vocabulary used in the Linear B tablets. The problem of loanwords with [b] still needs to be revisited in the coming paragraphs, but the foregoing lines corroborate what was said at the beginning: at best, [b] would have existed in

[386] For the sources (1-3), see Thompson (2005: 107). For the nursery and onomatopoeic words, see Gamkrelidze and Ivanov (1995: 53), and Mallory and Adams (2006: 360-361).
[387] The interpretation of words like *i-mi-ri-jo* /Imbrios/ ‘MPN’(?) or *o-mi-ri-jo* /Ombrios/ ‘(sender) of rain’(?) is uncertain. Nevertheless, the development **mr-* > [-mbr-] is likely since the epenthesis of **nr* > [-ndr-] had already operated (cf. e.g. *a-di-ri-a-pi* /andriamp^{h}i/ ‘(adorned) with images of men’). However, while the integration of the epenthetic [d] in the Mycenaean phonological inventory (as reflected by its spelling with the *d* series) would have been facilitated by the fact that /d/ was already phonemic, the same would not have been possible with an epenthetic [b]. See Thompson (2005: 111).
[388] The Linear B word *pa-ra-ku* is sometimes interpreted as a personal masculine name /Brak^{h}us/ ‘short’ (< **mṛg^{h}ú-s*) (Thompson (2005: 108-109), but it is not even certain that it is an anthroponym. Ventris and Chadwick index this word as: “Obscure, MN?” (*DocMyc*^{2}: 568).
[389] *Minimal pair*: in phonology, a set of two words which differ in meaning when only one sound is changed (e.g. English *pin v. bin*); the changing sound marks a contrast and is therefore a phoneme (see Crystal 2008: 307). For example, alongside *[brotós] < **mṛtós* ‘mortal man’, there would be no **[protós] or **[p^{h}rotós] in Mycenaean.
[390] Thompson (2005: 111). The Linear B word *ku-pi-ri-jo* is widely interpreted as /Kuprios/ ‘Cypriot’, but Szemerényi (1958: 60) pointed out that /Gúblios/ ‘Bybliot’ (cf. the Semitic name of Byblos, *Gubla* ~ *Gublu*; Horn 1963: 57) is also possible. This raises the question of how the foreign [b] would have been rendered by the Myceaneans. Since possibly [b] was already the allophone of /m/ before /l/ in Mycenaean, [-bl-] may simply have been identified with /-ml-/, but then a spelling with LB *m* would be expected.
[391] Thompson (2005: 110).

Mycenaean as a marginal phoneme, so the LB *p* series transcribed primarily the voiceless stops /p/ and /p^{h}/.

The dossier of LB p_2 is even thornier: the deciphered signs that have been recognized as members of this series are no more than three and are rarely used. Moreover, the transliteration of sign *29 as pu_2 is consensual, but the readings of signs *22 = pi_2 and *56 = pa_3 are not yet so.[392] Let us examine each case.

In most of its rare instances, pu_2 is used for spelling place and personal names, sometimes in alternation with *pu* /pu, p^{h}u/. Nonetheless, whenever the sign is used in the writing of a Greek word whose reading is reasonably secure, it is clear that it denotes /p^{h}u/, with a voiceless aspirate.[393] The value of the sign would be straightforward if it were not for the much debated word *da-pu$_2$-ri-to-jo* 'of the Labyrinth$^{(?)}$', also spelled as *da-pu-ri-to*[, which is almost certainly related to 1st millennium λαβύρινθος.[394] To this day, a dilemma persists: the Mycenaean spellings with LB *pu* and pu_2 imply [dap^{h}úrint^{h}os], but the later alphabetical β cannot have developed from */p^{h}/ and seems to point to [dabúrint^{h}os].[395] Melena makes the unlikely assumption that Greek [p^{h}] shifted from prehistorical *[b^{h}] only *after* the creation of Linear B[396] and proposes that when the script was created p_2 was assigned to native *[b^{h}] in Greek words as well as foreign [b] in loanwords. Thompson attempts to avoid Melena's questionable premise by suggesting that p_2 denoted [p^{h}] in Greek words and [b^{h}] in loanwords, whence *da-pu*$_{(2)}$*-ri-to-* [dab^{h}úrint^{h}os], later fully integrated in the native Greek phonology as [dabúrint^{h}os] > λαβύρινθος.[397] Still this does not end complications. On one hand, the non-Greek (Minoan?) *[b^{h}] postulated by Thompson is an *exceedingly rare* phoneme crosslinguistically.[398] One may suspect that *[b^{h}] is pondered because scholars have become too attached to the idea that if p_2 was used for a non-Greek sound, then the

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[392] See e.g. Thompson's (2005: 110-111, fn. 9) critical review of Melena (1987).

[393] I provide here a list based on Thompson (2005: 111-112, with references), but with comments and adaptations: (1) *pu$_2$-ra$_2$-a-ke-re-u* /p^{h}ul^{j}āh-agreus/, a place name, and the variant form *pu$_2$-ra$_2$-a-ki-ri-jo* /p^{h}ul^{j}āh-agrion/; (2) [*pe-*]*pu$_2$-te-me-no* /p$^{(h)}$ep^{h}utēmenon/ 'planted [sc. with trees]', perfect passive part. of a verb corresponding to Att. φυτεύω; (3) *pu$_2$-te-re* /p^{h}utēres/ 'planters', agent noun in /tēr/ built to a verb matching Att. φύω (4) *re-u-ko-ro-o-pu$_2$-ru*, if an error for ***re-u-ko-o-pu$_2$-ru* /leuko-op^{h}rus/ MPN 'having white eyebrows'; (5) *ze-pu$_2$-ra$_2$* /ʣep^{h}urjai/ 'ethnic adjective (nom. pl.)' (cf. Ζεφυρία, the old name of Halicarnassus, according to Strabo XIX, 656); and (6) *ze-pu$_2$-ro* /ʣep^{h}uros/, a man's name. For the last two words, cf. Greek Ζέφυρος 'westerly wind' and the disputed PIE source **h$_3$yeb^{h}-* 'copulate' (Beekes 2010: 499).

[394] *DocMyc*^{2}: 538.

[395] See e.g. Lejeune (1972: 57, n. 3). Even Chadwick has pointed out that "*pu$_2$* = *bu* is … remarkable" (*DocMyc*^{2}: 538).

[396] Melena (1987: 226-227). His assumption is very problematic because the distinction of *t* = /t, t^{h}/ and *d* = /d/ series in Linear B strongly implies that the devoicing of the Greek aspirated stops had already taken place by the time the script was invented (Thompson 2005: 112).

[397] Thompson (2005: 113-114).

[398] The existence of voiced aspirated consonants is debated and what is normally notated as /b^{h}/ is described as a breathy voiced stop /b^{ɦ}/ (here breathiness refers to "a vocal effect produced by allowing a great deal of air to pass through a slightly open glottis"; see Crystal 2008: 62). /b^{ɦ}/ occurs only in 2% of *UPSID* languages and 1% of the inventories of *PHOIBLE*, and is limited to the Indian subcontinent and some African regions. Moreover, all *UPSID* languages that have this sound also possess /d^{ɦ}/ and /g^{ɦ}/, and have large consonantal inventories, two features that seem unlikely for the Minoan language judging by the structure of Linear A.

latter must have been aspirated as well—which is an unnecessary assumption. On the other hand, it is not clear how this [b^h] would have developed to [b] (in order to justify the later spelling λαβύρινθος), which at best was marginal or allophonic in Mycenaean. Thompson is right, however, that the β of λαβύρινθος must be the phonological adaptation of a foreign sound at a stage after PIE *b^h > Greek /p^h/.[399]

I would like to propose a solution that is slightly more economical and is better supported typologically. Let us return to the more secure premises that Mycenaean Greek possessed only two phonemic bilabial stops, /p/ and /p^h/, and that LB p_2 denotes primarily /p^h/. In modern languages whose set of labial phonemes shows similarities to that of Mycenaean, such as Mongolian or Korean, the following strategies may be used in the adaptation of loanwords (depending, of course, on the exact phonemes and phonotactics of the recipient language): foreign [b] and [v] (a labiodental fricative) can be rendered with [p] or [w]; and [f] can be adapted as [p^h] or [w].[400] This tendency shows that it is possible that the word *da-pu*$_{(2)}$*-ri-to-* [dap^{h}urint^{h}os] possessed a voiceless labiodental fricative [f] in the language from which it was borrowed, and that an alternative adaptation of it in Mycenaean was *[dawurint^{h}os]. In other words: non-Greek [f] > Mycenaean [p^h] or [w]. It is true that this *[dawurint^{h}os] is not attested in Linear B (and how would it have been spelled, given that the syllabary appears to have lacked a *wu* sign?), but postulating its existence is a way of accounting for the unexpected β in λαβύρινθος.[401] The relevant comparandum is LB *mo-ri-wo-do*. Despite presenting its own problems of interpretation, the word has been widely accepted as a cognate of alphabetical μόλυβδος/μόλιβος ‘lead’,[402] which is interpreted as loanword in Greek.[403] The choice of writing *mo-ri-wo-do* with *w*, not *p*, implies that its phonological form is /moliwdos/. In turn, since /w/ occurs before coronal [d] most probably the Mycenaeans pronounced it as a labiodental [v] in this position. We know that when some Greek dialects that preserved /w/ shifted to the Ionic alphabet around 400 BCE (which lacked the letter Ϝ or *digamma*), they spelled /w/ with β. At this point, the sound was probably shifting from an approximant to a fricative: [w] > [β].[404] In other words, it

[399] Thompson (2005: 114).
[400] Mongolian (which has [p], [p^h] and [w], but not [b], [v] or [f]) borrows Russian [f] as [p^h], [p^{jh}] or [w] depending on context, while adapting [v] and [b] as either [p] or [w]: cf. e.g. Russian лаборант [laboránt] ‘laboratory assistant’ > Mongolian *лавраант [ɮawrant^h] (Svantesson 2005: 31). Korean presents a similar situation: foreign [f] > [p^h], [v] > [p] and [b] > lax [p] or tense [P] (Shin *et al.* 2013: 220-221).
[401] That /w/ does not occur before /u/ in native words is not an impediment for hypothesizing */dawúrint^{h}os/. For example, despite the absence of the cluster /wd/ in Proto-Greek, *mo-ri-wo-do* implies that it was tolerated in loanwords.
[402] *DocMyc*^{2}: 562.
[403] Melchert (2009) has argued that μόλυβδος is a loanword from a virtual Pre-Lydian **mariwda* ‘dark’ (based on Proto-Anatolian **mork^w-iyo* - ‘dark’ and Lydian *marivda* ‘dark deities’), as a reference to the color of the metal. Regardless of the accuracy of this etymology, the word must be borrowed, since /wd/ is not a native cluster. Words with -βδ- in 1st millennium Greek are either borrowed (e.g. βδέλλιον ‘gum of the oriental wine palm’ vs. Hebrew *bedōlaḥ*) or due to internal developments: cf. e.g. ἑπτά ‘seven’ vs ἕβδομος ‘seven’, which is from **séptmos* with voicing of **pt* before *m* in a stage preceding the emergence of a prop-vowel in-between (see Beekes 2010: 208, 368).
[404] Wachter (2010: 54).

is possible that some Greek words of the 1st millennium BCE, especially loanwords, were spelled with β but originally contained /w/. This might have been the case with the hypothetical *[dawúrint^{h}os] > λαβύρινθος (the problem of LB *d* = /d/ vs. alphabetical λ will be addressed in the next section). The foregoing account is meant as no more than an alternative hypothesis, as two anomalous words can hardly lead to firm conclusions. However, I would stress that all facts taken together make it unnecessary to assume that *pu*$_2$ represented something other than the Greek syllable /p^{h}u/.

So far LB *22 and *56 have not been attested in uncontroversial native Greek words. While the evidence for reading LB *22 as *pi*$_2$ is meager, LB *56 has been transliterated as *pa*$_3$[405] based on the pairs *56-*ti* ~ *pa-ti*, *56-*ra-ku-ja* ~ *pa-ra-ku-ja*, and *ka-ra-**56-*so* ~ *ka-ra-pa-so*.[406] These indicate that the sign performs like *pu*$_2$ in interchanging with a syllabogram of the *p* series, which makes the opinion of Lejeune, Georgiev and Consani[407] that it rendered /p^{h}a/ the adequate default assumption. The pair *pa*$_3$*-ra-ku-ja ~ pa-ra-ku-ja* has played an important role in assessments of the *p*$_2$ series. The word is an adjective (nom. pl. neut.) that describes textiles[408] and is related to *pa-ra-ke-we ~ pa-ra-ku-we*, which refers to some kind of valuable mineral used to decorate furniture.[409] Melena proposes that *pa*$_3$*-ra-ku-ja ~ pa-ra-ku-ja* describes something having the color of a material named **pa-ra-ku*, which to his mind would be a Semitic borrowing in Greek via Minoan. He follows an idea originally by Ventris that the word meant 'turquoise, emerald' based on the comparison with Neo-Babylonian Akkadian *barrāqtu* 'a gem' < *barāqu* 'to flash, shine' and Hebrew *bāreqet* 'emerald', and further adduces alphabetical βαρακίς 'bluish-grey garment'.[410] This etymology has been used by Melena as evidence for his theory that *p*$_2$ transcribed [b^{h}] in Greek words and [b] in loanwords, while B. Davis resorts to it in his argument that LA *p*$_2$ represented a *voiced* bilabial fricative [β]. Yet the fact remains that connection of *pa*$_3$*-ra-ku-ja ~ pa-ra-ku-ja* to βαρακίς and a set of Semitic words, via */barakús/, is wholly hypothetical. By this token, it is no more economical than the alternative of Petruševski, who suggests linking *pa-ra-ku-* to σφραγίς '(stone used as a) seal or signet', via a virtual */sp^{h}ragús/ that also fits neatly the spelling *pa-ra-k-* ~ *pa*$_3$*-ra-k-*: /(s)p^{h}(a)rak$^{(h)}$/g-/.[411] In the absence of a definitive etymology, we must admit it cannot be demonstrated that LB *pa*$_3$ represented anything other than Greek /p^{h}a/, with a voiceless aspirate.

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[405] This transliteration was initially used because in the early days of the decipherment of Linear B sign *qa* was taken to be *pa*$_2$, but by the time the latter was clarified it had already become a convention.
[406] As seen by Palmer (1954: 67) apud Melena (1987: 204-8-9).
[407] See Georgiev (1956), Lejeune (1956: 139ff) and Consani (1981), apud Melena (1987: 205, fn. 12-14).
[408] *DocMyc*^{2}: 568, 594.
[409] *DocMyc*^{2}: 568; Aura Jorro (1985-1993: 83).
[410] Melena (1987: 224-226). He includes here Greek (σ)μάραγδος 'emerald', which he connects to Akkadian *barrāqtu* 'a gem'. Even this is problematic, because neither *pa-ra-ku* nor *pa*$_3$*-ra-ku-ja*/*pa-ra-ku-ja* have a /kt/ or /gd/ cluster. Moreover, (σ)μάραγδος may well be borrowed from some Semitic cognate of Ugaritic *šmrgt ~ šmrḫt* 'coated' or 'emerald'(?) (see *DULAT*: 830).
[411] Petruševski (1965: 202) apud Aura Jorro (1985-1993: 83). Notice that 'seal, signet' is the generic meaning of σφραγίς, but already in Herodotus (7.69) the term denotes the gem or stone used in the production of this type of object.

The implication is that the arrangement of the labial series in Linear B is different from that of the other stops. On one hand, there is a *p* series, which represents voiceless /p/ and /p^h/, but not voiced /b/. On the other hand, there is a p_2 series which is not as frequently used as *p* and redundantly transcribed the voiceless aspirate /p^h/.

When compared to the coronal and labial series, the velar and labiovelar signs present a third type of situation, in which—now factually—the voiced/unvoiced and unaspirated/aspirated contrasts are underrepresented: *k* = /k, g, k^h/ and *q* = /k^w, g^w, k^{wh}/. The arrangement of the Linear B stops series is as shown in Table 3.36.

Table 3.36: The representation of stops in Linear B.

LB series	Mycenaean phonemes	Salient articulatory features	Usage
t	/t, t^h/	coronal, stop/obstruent, unvoiced	Frequent
d	/d/	coronal, stop/obstruent, voiced	Frequent
p	/p, p^h/	labial, stop/obstruent	Frequent
p_2	/p^h/	labial, stop/obstruent, aspirated	Marginal
k	/k, g, k^h/	velar, stop/obstruent	Frequent
q	/k^w, g^w, g^{wh}/	velar, stop/obstruent, labialized	Frequent

Seen from this perspective, the arrangement of the stop series in Linear B looks more assymetrical than normally admitted and need not be the product of absent voicing and aspiration contrasts in their Linear A counterparts. It could simply reflect choices of adaptation dependent on how close the salient features of Minoan stops were to those of the stops of Mycenaean Greek. In this light, what can we say about these sounds in the language of Linear A?

3.2.3.2.1.2 Reinterpreting the "stop" series in Linear A

At least some stops[412] are found in every documented human language.[413] All of the 451 languages of *UPSID* have three or more stops. Moreover, some types of stop phonemes are found to be absent from a given human language only in exceptional cases: only five (1.11%) of all *UPSID* languages do not possess any bilabial stop and only three (0.67%) lack any velar stop. Hence, the language of Linear A most likely possessed at least three stops.

That the main contrast between LB *t* and *d* is the feature [+VOICE] implies that originally LA *t* and *d* denoted a voiceless and a voiced coronal *obstruent*, respectively.

[412] *Stop* (often used synonymously with *plosive*) refers to those consonantal sounds produced when a complete closure in the vocal tract (occlusion) is suddenly opened, releasing air pressure with an explosive sound (Crystal 2008: 372).
[413] Maddieson (2013a).

Because the vast majority of human languages possess some form of voiceless coronal stop /t/,[414] we can make the unproblematic claim that most likely this is the sound behind LA *t*. The question of what kind of obstruent LA *d* represented is more problematic.

One longstanding problem of Aegean epigraphy is that the LA *t* and *d* series had different fates in Linear B and Cypro-Greek: thus, LA *ti* and *to* are directly comparable to CGk *ti* and *to*, but LA *da* is the equivalent of CGk *ta* (cf. Table 3.1). Ventris and Chadwick tentatively suggested that "the two series of dentals … probably represented a different distinction in Linear A".[415] A more specific proposal by Lejeune (1958) gained much acceptance in the literature. The French scholar believed that the separate voiceless/voiced distinction in the LB *t* and *d* series was as unexpected as the ambiguous LB *r* series used for both /r/ and /l/, and to account for both anomalies he proposed that LA *d* originally covered a Minoan sound between /d/ and /l/. In his opinion, this would explain (1) why λαβύρινθος appears in Linear B as *da-pu*$_2$*-ri-to-jo*, not ***ra-pu*$_2$*-ri-to-jo*; (2) the orthographic alternation δ/λ in certain pairs of alphabetical Greek words supposed to be loanwords from a Pre-Greek language (i.e. Minoan?): e.g. Ὀδυσσεύς ~ Ὀλυσσεύς 'Odysseus' and δάφνη ~ λάφνη 'bay'.[416] All of them would contain this special Minoan voiced coronal. Assuming this sound was lateral,[417] Lejeune hypothesized that the choice of reusing LA *d* for Mycenaean /d/ left the devisers of Linear B with no other remedy but to cumulate the values /r/ and /l/ in the *r* series. In the end, he admitted that the developments LA *da* > LB *da*/CGk *ta* vs. LA *ro* > LB *ro*/CGk *lo* cast doubts on the lateral character of LA *d*,[418] but his original theory nevertheless gained deep roots in subsequent scholarship.

We have seen that Davis extensive investigation led him to the conclusion that LA *d* represented a dental fricative unmarked for voicing: [θ, ð].[419] His approach is based mainly on three clues:

(1) The presumable etymological connection between LA (-)*du-pu*$_2$*-re*, LB personal names *du-pu*$_2$*-ra-zo*/*da-pu*$_2$*-ra-zo*, LB *da-pu*(*$_2$*)*-ri-to-* and alphabetical Greek λαβύρινθος.[420] Not very differently from Lejeune, Davis takes this as an indication that Minoan *d* is not a stop, but rather "another sound foreign to Greek, and somehow close to both [d] and [l]".[421]

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[414] Only 6 of the 451 languages of *UPSID* (1.3%) lack a voiceless coronal stop, /t/ or /t^h/.
[415] *DocMyc*^{2}: 395.
[416] These alternations were considered a related problem at least since Heubeck (1957).
[417] *Lateral*: a type of sound "in which the tongue is contracted in such a way as to narrow its profile from side to side so that a greater volume of air flows around one or both sides than over the center of the tongue" (following the definition of Ladefoged and Maddieson 1996: 182). The most common phoneme of this type is the voiced lateral approximant [l].
[418] Lejeune (1958: 327-328). Stephens and Justeson (1978: 279) highlight the same obstacle.
[419] B. Davis (2014: 204-210).
[420] Valério (2007: 6-8).
[421] B. Davis (2014: 204).

(2) The long tradition of connecting *da-pu*$_{(2)}$*-ri-to-*/λαβύρινθος to the Hittite royal title *labarna-*/*tabarna-* and the Lycian personal name *Dapara-*/ΛΑΠΑΡΑΣ, and Yakubovich's suggestion that the source of all this lexical material was a south Anatolian non-IE loanword **ðaBar-*, with a special sound [ð] causing the orthographic alternations.[422] The topic is quite complex, but suffice to say this connection is ultimately based on: the old and unconfirmed idea by Arthur Evans that λαβύρινθος is the 'royal palace' of Knossos (semantics); the coronal lateral ~ non-lateral spelling variations (phonology).

(3) The Distinctive Feature Theory (DFT), which suggests that, when a word with a foreign phoneme is borrowed, speakers of the recipient language substitute the alien sound or sounds (in terms of articulatory features) amongst the sounds of their own language.[423]

One interesting fact not mentioned in Davis' work is that, by the same token, the DFT would also indicate the coronal lateral fricative [ɮ] as equally close to /d/ and /l/ in terms of articulation. At the same time, we might argue that, as a lateral, [ɮ] would in theory provide a stronger motivation for the δ/λ alternations than [ð]. Nevertheless, this is not an obstacle to Davis' interpretation of *d* as [θ, ð] because no language is known to contrast /ð/ and /ɮ/, or voiceless /θ/ and /ɬ/. Thus, some languages have coronal fricative phonemes with both lateral ([ɮ]) and non-lateral pronunciations ([ð]),[424] and this might have been the case with Minoan as well.

The introduction to Davis' hypothesis is not complete without a further point. CGk *sa*, *se*, and *si* have uncontroversial predecessors in LA *sa*, *se*, and *si*, but it is possible that CM 47, here assimilated to CM 46, is the indetermediate form between LA *du* and CGk *su* (Table 3.37).[425]

[422] Yakubovich (2002).
[423] B. Davis (2014: 205, n. 1167) citing Halle and Clements (1983) and Halle (2005: 25).
[424] Unfortunately, I know of only two examples, both from Southeast Asia. The first is Amis (an Austronesian tongue of Taiwan), which possesses a lateral fricative pronounced with varying "post-dental or interdental" realizations in different dialects, including lateral [ɮ], "non-sibilant central" [ð̠] and even a plain stop [d] that is weakened to [ð] in intervocalic position (Maddieson and Wright 1995: 47). The second is the Taishan dialect of Chinese, which has a "voiceless apical dental lateral fricative" /ɬ/ that many speakers reportedly realize as a dental fricative [θ] (Maddieson and Emmorey 1984).
[425] To my knowledge, this comparison was first made in Nahm (1981: Abb. 3), but see also Valério (2008: 63).

Table 3.37: Counterparts of LA *du*[??], *sa*[?], *se*[?] and *si* in Cypro-Minoan and Cypro-Greek.

LA		LB			CM		CGk		
𐙀	*du*[??]	𐙁	*du*	/du/	𐘣 / 𐘤	46 / 47	𐙄	*su*	/su/
𐙂	*sa*[??]	𐙃	*sa*	/sa/	𐘥	82	𐙅 ~ 𐙂	*sa*	/sa/
𐙆	*se*[?]	𐙇	*se*	/se/	𐘦	44	𐙆	*se*	/se/
𐙈	*si*	𐙉	*si*	/si/	𐘧	27	𐙈	*si*	/si/

This development is crucial, because it is one of the bases that led Davis to propose a voiceless allophone [θ] for LA *d*. Thus, he explains the problematic LA *du* >> CGk *su* development in two possible ways:[426]

(1) The language of Cypro-Minoan had coronal fricatives [θ, ð] and the creators of the script borrowed LA *d* syllabograms to transcribe them. Since Cypriot Greek had no such fricatives, the creators of the Cypro-Greek syllabary then redeployed these Cypro-Minoan syllabograms to denote Greek sounds close to them. Thus: LA *du* /θu, ðu/ > CM 47 /θu, ðu/ > CGk *su* /su/.

(2) The language of Cypro-Minoan possessed no coronal fricatives, and the inventors of the script borrowed LA *du* signs to represent Cypro-Minoan sounds very close to Minoan /θu, ðu/, namely one or more fricative sibilants. The creators of the Cypro-Greek syllabary then retained these syllabograms with their Cypro-Minoan value. Hence: LA *du* /θu, ðu/ > CM 47 /su, zu/ > CGk *su* /su/.

These proposals have obvious ramifications for the values of the Cypro-Minoan signs and will be addressed below (3.4.9), but, for now, we need to deal strictly with the evalution of Davis' interpretation of the LA *d* series as a coronal fricative.

Davis starts with the premise that the sound behind LA *d* is the cause of some of the δ ~ λ alternations in Greek but, upon close scrutiny, this notion proves dubious. The etymological ties between LA *du-pu*$_2$*-re* and the Hittite royal title *l*/*tabarna*- are not supported by hard evidence,[427] and the one clear datum is the match between LB *da-pu*(2)*-ri-to*- and alphabetical λαβύρινθος. Like other authors that have dealt with the question before, Davis does not consider too significant for the problem the fact that the pair *is not synchronic*. Thus, λαβύρινθος is first attested in Herodotus and is separated from LB *da-pu*(2)*-ri-to*- by more than seven centuries. Conversely, in the corpus of Linear B there are no compelling examples whatsoever of alternations between *d* = /d/ and *r* = /l/, which is what we would to expect if the alleged alternation dated back to the

[426] B. Davis (2014: 212-214).
[427] See Valério (forthcoming).

Bronze Age and was caused by a Minoan adstrate. This absence is often overlooked. As a consequence, it is perfectly possible that λαβύρινθος owes to a later phenomenon.

Another word with interchanging δ ~ λ used by Davis in his argument is δίσκος ~ λίσκος 'discus, quoit',[428] but the latter was glossed by Hesychius alongside δάφνη ~ λάφνη 'sweet bay' in Hellenistic times, and both were attributed by the author to the inhabitants of Perge,[429] a city in the southern Anatolian region of Pamphylia. Since λαβύρινθος is first attested in the writings of Herodotus, a native of Halicarnassus (Caria), is it a coincidence that the three cases feature the d/δ ~ λ alternation in initial position and that the lambdacist versions have some connection to Anatolia? Another interesting case is that of the name of a Cimmerian or Scythian leader who raided parts of Anatolia in the 7th century BCE. The individual in question is mentioned in Neo-Assyrian cuneiform sources as *Dugdammê* ~ *Tugdammê* and as Λύγδαμις in the writings of Kallimachos (3rd century BCE) and Strabo (*Geo*. 1.3.21).[430] The problem is complicated by the possibility that Λ for Δ is a scribal error, as well as the fact that Herodotus (*Hist*. I.61) writes of a tyrant of Naxos, i.e. a Greek, who also bore the name Λύγδαμις. The linguistic source of the name may be uncertain, but it obviously circulated widely in Asia Minor. Thus Kuhrt ponders difficulties "in rendering the specific sound of an Anatolian language" as the cause for the change from *T*/*D*- to Λ-.[431]

The notion that these three cases—four if we count λαβύρινθος—may owe to an Anatolian adaptation of word-initial /d-/ as /l-/ can be substantiated. According to the specialists, IE Anatolian languages such as Lydian and Lycian had phonotactic restrictions for a voiced coronal stop /d/ in word-initial position.[432] Lydian, for example, adapted the Aeolic Greek divine names Δαμάτηρ 'Demeter' and Δεύς 'Zeus' as *lamẽtru* and *lewś*/*lefś*,[433] substituting /d/ with /l/.[434] It is possible that Pamphylian λίσκος and λάφνη correspond to standard δίσκος and δάφνη as uttered by speakers of a local Anatolian dialect with similar restrictions. Likewise, a virtual **δαβύρινθος, related to Mycenaean *da-pu*$_{(2)}$-*ri-to*- /dap^{h}úrint^{h}os/ (or to a virtual */dawúrint^{h}os/ as hypothesized above), may have been the Ionian form used in southwestern Anatolia, including Herodotus' Caria, before a local variant λαβύρινθος emerged amongst speakers who had Greek as second language and an Anatolian dialect as mother tongue. In my opinion,

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[428] B. Davis (2014: 207)
[429] Latte (1956).
[430] See Kuhrt (1987: 186-189).
[431] Kuhrt (1987: 187), crediting an oral suggestion by S. Karwiese (1984).
[432] See Melchert (1993: 249, 252).
[433] Neumann (1987: 186); Melchert (1994: 335).
[434] A suitable typological parallel from a contemporary language is provided by Yaqui, a Uto-Aztecan language of NW Mexico, which replaced foreign [d] with either [r] or [l] in Spanish loanwords: e.g. *lios* < *dios* 'god' (Estrada Fernández 2009: 834, 844-846). The substitution of [l] for a dental stop is unsurprising since a lateral approximant is essentially a coronal articulated with an occlusion—the most salient feature of stops (Ladefoged and Maddieson 1996: 182-183). Furthermore, the preference for [l] over the voiceless coronal [t] receives a plausible explanation if we accept that in foreign [d] the feature of voicing was perceptually favored by speakers of Lydian, and in this [l] obviously has the advantage.

the distant Minoan *d* cannot be associated with these orthographic peculiarities of the 1st millennium BCE and there are no solid grounds for assuming it had a lateral quality.

The same occurs with the case for a voiceless allophone. Part of Davis' argument for the pronunciation of LA *d* as [θ] besides [ð] is sustained on the DFT. Supposedly, Minoan words with allophonic [θ] would have been borrowed into Mycenaean with either [t^h] or [s] (spelled in later Greek with the letters θ or σ), because these were the native sounds closest to the foreign fricative. Davis draws on a parallel from Doric. In this Greek dialect, original θ = [t^h] had shifted to a fricative [θ] by the 5th century BCE and the new sound was approximated by authors writing in Attic with σ when they wrote Doric words such as σύματος and σιόν (= Attic θύματος and θεόν).[435] To support this hypothesis, Davis collects two sets of words he considers loaned from a "pre-Greek" language that are spelled with LB *t* and alphabetical θ ~ σ, as shown in Table 3.38.

Table 3.38: Alternations between LB *t* and alphabetical θ ~ σ in alleged "Pre-Greek" words.[436]

Linear B	**Alphabetical θ**	**Alphabetical σ**
qe-to /k^wét^{h}os/$^{(?)}$[437] 'type of vessel' (Pylos, Mycenae)	πίθος 'pithos' πιθάκνη 'pithoid jar'	πισάκνᾱ (Hsch. π 2352) 'pithoid jar' (Doric); cf. also φιδάκνη (Attic)
di-pte-ra /dip^{h}t^{h}éra/ 'hide, leather' (Pylos)	διφθέρα 'hide, leather'	διψάρα (Hsch. δ 2028) 'hide, leather'

The argument is ingenious, but hampered by the lack of examples of actual Linear A words in which *d* alternates with Linear B *t* ~ *s* or alphabetical θ ~ σ. The pair LA *na-da-re* ~ LB anthroponyms *no-da-ro* / *no-sa-ro*, also highlighted by Davis, is interesting, but the last two may be different names. In addition, the groups in Table 3.38 do not follow the criterion of being words with Cretan connections, which Davis so meticulously followed in other cases. The word πισάκνᾱ is glossed as Laconian by Hesychius, which makes it a Doric form from Hellenistic times. This means that is likely reflects *[pit^{h}áknā] > [piθáknā], with the regular Doric shift [t^h] > [θ],[438] and Hesychius may simply have rendered [θ] with σ, as he did with other Doric glosses.[439]

[435] B. Davis (2014: 208, fn. 1184): σύματος (Thuc. 5.77.1); σιόν (Arist. *Lysistrata* 1298).
[436] According to B. Davis (2014: 208).
[437] The connection between *qe-to* and πίθος, which show diverging vocalism, is not undisputable. Especially in the light of Attic φιδά-κνη, πίθος may be a loanword from some prehistoric European tongue: cf. Latin *fidēlia* 'clay or glass vessel'; French *bidon* 'small portable container' from a Scandinavian source akin to Icelandic *bíða* 'milkbucket'; and Norwegian *bidne* 'vessel'. The rare Greek suffix -κνη/κνις appears in vocabulary that could easily be borrowed: cf. δακνίς 'a bird', ποδάκνη 'band of the bow' and προκνίς 'a sort of dried fig'.
[438] The only variant less easily accounted for is φιδάκνη, and thus πιθάκνη ~ φιδάκνη might actually reflect a very old loanword with a voiced coronal consonant (including /ð/). However, notice that the Doric shift [t^h] > [θ] → σ may have acted on *πιθάκνᾱ > πισάκνᾱ even if the latter was borrowed into Greek at an earlier stage.
[439] Cf. e.g. σεῖν· θεῖν. Λάκωνες (Hsch. σ 328).

The second word, διψάρα, might likewise reflect Greek dialectal phenomena.[440] The fact that neither group in Table 3.38 is ever spelled with LB *s* only adds to our doubts. The evidence for a Minoan voiceless [θ] must be considered fragile at best.

As regards the development LA *du* > CM 46/47 > CGk *su*, the reallocation of the sign to a sibilant in Cyprus can be accounted for in other ways, as we will see in 3.4.9, so it would be hazardous to posit that LA *d* = [θ, ð] only to explain it.

The first step to reconsider the value of the *d* series is to look at is behavior in Linear A as well as to how Minoan words with this sound were adapted in Mycenaean. The evidence is not abundant, but it is enough to draw some conclusions. First: the corpus of Linear A provides us with only one compelling example of an alternation of *d* with another consonant, and that consonant is *t*: *re-di-se* (HT 85b.4) ~ *ra-ti-se* (HT 6b.2).[441] Second: there are seven Linear A sequences with correspondences in Linear B (mostly non-Greek personal names), with nine syllables containing *d*. Seven show a direct correlation LA *d* > LB *d*, suggesting that Greek /d/ was the most optimal rendering of the sound behind LA *d*, but two feature LA *d* > LB *t*: *di-di-ka-se* > *di-ta-ka-so* and *me-ki-di* > *me-ki-ti* (see Table 3.7).[442] This means that, besides /d/, LA *d* could sometimes be rendered with /t/ or /t^h/ in Greek, and in the only occasion that it interchanges with another Minoan sound, it is that of LA *t*, which, as we have seen above, was most likely a voiceless coronal stop. Thus, the most likely hypothesis is that LA *d* represents a coronal stop as well, but one that was voiced, i.e. /d/. This interpretation is well in line with phonological universals: 74% of the sound inventories in *PHOIBLE* possess [d], whereas [ð] occurs in only 5% of them and [ɮ] in only 2%. The implication would be that LA *d* and *t* were borrowed into Linear B to express identical or very similar sounds.

The borrowing of LA *p* to represent Greek /p, p^h/ in Linear B implies that the series originally rendered a labial obstruent, most likely a stop. The idea that Minoan possessed at least one bilabial stop can hardly be controversial, as languages lacking these sounds are extremely rare (only 5, or 1.11%, of the languages of *UPSID* have no bilabial stop). However, it is difficult to say whether this obstruent was voiceless or voiced: since /b/ was not a phoneme in Mycenaean, LA *p* would have been adapted to /p, p^h/ regardless. In addition, among the bilabial stops /p/ and /b/ are the two most recurrent in human languages.[443] If it is true that LA *pa-i-to* corresponds faithfully to LB *pa-i-to* as the Minoan transcription of the place-name Phaistos (see Table 3.7), then

[440] Hesychius does not assign διψάρα to any specific community of speakers, but this may have been a Doric counterpart to διφθέρα. As proved by its presence in Mycenaean, the word existed in Greek since a very early period and therefore it is expected that over time it developed different forms in the various Hellenic dialects.

[441] Both words are listed side-by-side with the sequence *wa-du-ni-mi*; moreover, tablet HT 6 lists a sequence *pa_3-ni-ni* (same side, line b.6), while HT 85 has *pa_3-ni* (side A, line a.2). It is likely that these tablets have related subjects.

[442] It is not impossible that the similarity between *me-ki-di* > *me-ki-ti* is accidental.

[443] /p/ occurs in 83.15% of the *UPSID* languages and in 87% of the inventories of *PHOIBLE*, whereas /b/ is found in 63.64% of the languages of *UPSID* and 71% of the descriptions of *PHOIBLE*.

the Minoan sound was adapted in Greek as aspirated /p^h/ at least once, and therefore it is possible that it had some kind of secondary articulation, even if allophonically. On the other hand, Davis notes that the name of Phaistos appears in Egyptian inscription of Kom el-Hetan (ca. 1350 BCE) as *bi-ya-š-ta-ya* (where *-i-ya-* renders long /ē/ or the diphthong /ei/), thus suggesting that LA *p* was voiced, at least sometimes.[444] If both examples were taken literally, we might say that Minoan possessed a bilabial stop, possibly /p/, that was occasionally pronounced as [b] and [p^h], which is essentially what Davis theorizes (see Table 3.35). However, both examples are isolated and provide insufficient grounds for a cogent interpretation of the Minoan phoneme. In fact, Hoch documents two rare cases in which Egyptian *b* is used to transcribe Semitic /p/, so it is not impossible that this is what happened with *bi-ya-š-ta-ya*.[445]

The retention of LA p_2 in the Mycenaean script as an alternative means for spelling /p^h/ suggests it did not represent a plain bilabial stop, but a type of sound that was only comparable to the Greek aspirate. For this reason, the underlying Minoan may have been a labial stop with some *secondary articulation* or a non-plosive labial obstruent, possibly a fricative. Aspirates and fricatives may be perceived by speakers as approximate since audible noise is involved in the articulation of both types of sounds[446] (cf. above the adaptation of fricatives as aspirated stops in Mongolian and Korean). At the outset, it must be underlined that, unlike the correspondences in vocabulary items like *da-pu$_2$-ri-to- ~ da-pu-ri-to-* and *pa$_3$-ra-ku-ja ~ pa-ra-ku-ja*, the validity of matches such as *ta-pi$_2$-de-so ~ ta-mi-de-so* and *tu-pa$_3$-da-ro ~ tu-ma-da-ro*, posited by Melena and considered by Davis,[447] is questionable: these two pairs may actually contain different anthroponyms[448] and therefore cannot be taken as positive evidence that [+NASAL] as a feature of the sound underlying LA p_2. Thus, we have again only one piece of evidence for interpreting this Minoan sound, namely the connection between LA (-)*du-pu$_2$-re*, LB personal names *du-pu$_2$-ra-zo*/*da-pu$_2$-ra-zo*, LB *da-pu*($_2$)*-ri-to-* and 1st millennium λαβύρινθος. The latter suggests that LA p_2 was adapted in Greek with [p^h] as well as with a sound that later was represented with the letter β, possibly /w/. Judging by the typological parallels of Mongolian and Korean discussed in 3.2.3.2.1.1, this is consistent with a voiceless fricative, such as the labiodental [f] or the less common bilabial [ɸ]. A possible second piece of evidence, which did not go unnoticed to Davis, is the correspondence between Akkadian *Kaptara*, Biblical Hebrew *Kaptor* (later *Kaphtor*), and Egyptian *kftiw*: if this place-name was derived from a Minoan word containing a voiceless labial fricative, it would be unsurprising for the latter to be

[444] B. Davis (2014: 183, fn. 1027, and 202). For Hieroglyphic Egyptian *b* as /b/, see Loprieno (1996: 33, Tab. 3.1) and Loprieno and Müller (2012: 107, 112-113).
[445] Hoch (1994: 401).
[446] *Aspiration* is defined as "audible breath" produced in the articulation of certain stops (Crystal 2008: 38), while *frication* refers to "the turbulent noise produced by the vocal organs engaged in the production of fricatives and other consonants" (*ibid*.: 199).
involving a constricted airflow
[447] Melena (1987: 209, 223, 228); B. Davis (2014: 215, 217).
[448] Already Thompson (2005: 110, fn. 9).

adapted with *f* in Egyptian, but *p* in Akkadian and Biblical Hebrew (which lacked phonemic labial fricatives).[449] However, it may not be necessary to posit a voiced allophone for this fricative as Davis proposes. The advantage of posing /f/ as the phoneme behind LA p_2 is that it is a common phoneme in the languages of the world (39.91% of the *UPSID* languages and 49% of the inventories in *PHOIBLE* have this sound), so it would not be farfetched to posit its existence in Minoan.

Above we have seen that it is exceedingly rare for a language to lack any velar stop, so most likely LA *k* represents one. The phoneme proposed by Davis for this series, [k], is by far the most frequent velar in the languages of the world: 89.36% of the *UPSID* languages and 93.54% of the descriptions in *PHOIBLE* have it. The nature of LA *q*, which Davis proposes represented a labialized velar stop,[450] has also ramifications for a typological approach to the sound of LA *k*. Two scenarios can be envisaged:

(1) If both LA *k* and *q* were velar stops, and *q* was labialized: 20 out of 22 *UPSID* languages that possess two velar stops, of which one is labialized, have [k] and [k^w]. That is, it would be plausible to interpret *k* as /k/ and *q* as /k^w/.

(2) If LA *q* was not a stop and *k* represents the only Minoan velar of this kind: 90 out of the 100 *UPSID* languages with only one velar stop have [k], while three others have [k^h].

Thus, in either case statistics favor [k] as the most likely of LA *k*. If the Linear A sequences (*j*)*a-di-ki-te-te-* and *ja-di-ki-tu* are related to LB *di-ka-ta* /Diktā/ 'Mt. Dikte' and *di-ko-to* /Diktos/ 'MPN', they also support the interpretation of LA *k* as a voiceless velar. Less doubtful is the case of the Cretan place-name LA *su-ki-ri-ta* > LB *su-ki-ri-ta* (Table 3.7), which survived in alphabetical form as Σύβριτα, whence the Bronze Age form must have been /Sugrita/.[451] While the details of the labialization *g* > β are uncertain, it suggests that before a liquid Minoan *k* was pronounced voiced.

Davis' two main arguments for interpreting LA *q* as a labialized velar stop /kw/ are the existence of correspondences like LA *qa-qa-ru* > LB *qa-qa-ro* and LA *qa-ra*$_2$*-wa* ~ *qe-ra*$_2$*-u* > LB *qa-ra*$_2$*-wo* (see Table 3.7); and the fact that /k^w/ is the most common labialized phoneme in the languages of the world. However, the pairs in question only show that the sound of LA *q* was close to LB *q*, not that it was exactly the same. In other words, we only know that Minoan *q* was identified with the one or more of the Mycenaean labialized velars /k^w, g^w, k^{wh}/, but its articulation may have been

[449] B. Davis (2014: 218, fn. 1221). The *ph* of *Kaphtor* reflects a late development (from the second half of the 1st century onwards) in Biblical Hebrew, when /p/ began to be realized allophonically as a fricative [f] after vowels (McCarter 2008: 39, 41, 47), whence the conventional spellings *Kaphtor* or *Caphtor*.
[450] B. Davis (2014: 236-239).
[451] Notice that Linear A also has *su-ki-ri-ta*, not ***su-pi*(*$_2$*)*-ri-ta*, hence LB *su-ki-ri-ta* cannot represent a Mycenaean attempt to adapt a Minoan [b] as [g], as suggested by Thompson (2005: 111).

different. For example, historically, Castillian adapted foreign [w] as /g^{w}/, realized as a stop [g^{w}] or fricative [ɣ^{w}] depending on the context, in borrowings: cf. Germanic *wardan* > Castillian *guardar* [g^{w}arðaɾ] 'to keep' and Arabic *al-wazir* > *alguacil* [alɣ^{w}aθil]) 'bailiff'.[452] If LA *w* does not represent an approximant /w/, but another sound, such as a fricative /β/ (see discussion below), then it is theoretically possible that LA *q* represented /w/. However, it would be surprising if LA *w* represented /β/ and *q* were /w/, as the two are very close sounds and so far we lack examples of LA or LB *w* ~ *q* orthographic alternations. This lends support to Davis' interpretation of LA *q* as a labialized velar.

If, as Ventris and Chadwick pondered, LB *qa-ra-i-so* /K^{w}raisos/$^{(?)}$ is the Mycenaean form of later Πραισός, i.e. the Cretan place-name Praisos,[453] with the well-established shift /k^{w}/ > /p/ in later Greek, then this is a case in which Minoan *q* was borrowed as a *voiceless labialized velar*, even before a liquid (cf. differently LA/LB *su-ki-ri-ta* > Σύβριτα). In the 1st millennium BCE, one Eteocretan inscription from Praisos features the form ΦΡΑΙΣΟ-, possibly with aspiration of the initial stop.[454] Davis uses this example to suggest tentatively that LA *q*, which he interprets as /k^{w}/, had an aspirated allophone [k^{wh}], yet the aspiration in Eteocretan needs not reflect a Minoan feature as it is not clear at what level the two languages, separated by several centuries, are related; nor do we know what exact Eteocretan sound the letter φ stands for. It is not impossible that ΦΡΑΙΣΟ- was reborrowed from Greek. Another case of interest is that of LB *qi-ja-to*,[455] a non-Greek male name from Knossos that may correspond to the equally non-Greek male name Βίαθθος, from 2nd-century BCE Polyrrhenia (western Crete).[456] The two forms might in turn equate with LA *qi-ja-du*[as well, but the latter comes from a fragmentary clay tablet and it is not certain that it represents an anthroponym.[457] Nevertheless, the lack of a Greek etymology sustains the interpretation of LB *qi-ja-to* ~ alphabetical Βίαθθος as a native Cretan (Minoan?) personal name, so it may help us elucidate LA *q*, which is the Minoan sound normally rendered with LB *q*. Because Mycenaean /g^{w}/ latter develops to /b/ → β, and because in the Doric dialect of Crete -θθ- is the outcome of *-σθ-, LB *qi-ja-to* probably reflects /G^{w}iast^{h}os/.[458] The latter implies in turn that the sound represented by LA *q* was pronounced with voicing in initial position, which is the contrary to what LB *qa-ra-i-so* > Πραισός seems to show. Unfortunately, as with other Linear A series, we are dealing with very isolated examples that utterly remain inconclusive. To sum up, a labialized velar is the most economical interpretation for the sound represented by LA *q* and, in light of the

[452] Jacobs and Van Gerwen (2006: 81-82).
[453] *DocMyc*^{2}: 576.
[454] Valério apud B. Davis (2014: 238, n. 1366).
[455] Text KN Db 1140.
[456] Hitchman (2006: 83).
[457] The tablet is HT 84. See B. Davis (2014: 210).
[458] Valério apud B. Davis (2014: 209-210).

typological tendencies mentioned above, it is most likely /k^{w}/. Without compromising about allophones, this is in line with Davis' hypothesis.

Alongside LB *q* = /k^{w}, g^{w}, k^{wh}/, the Mycenaean script includes an array of syllabograms that transcribe sequences of the type C+*w*. Those that have been transliterated with certainty are LB *48 = *nwa*,*87 = *twe*, *90 = *dwo*, and *91 = *two* (see Table 3.4). It is a crucial point that, unlike *q*, these Mycenaean signs spell clusters (cf. *pe-ru-si-nwa ~ pe-ru-si-nu-wa* for /perusinwa(i)/ 'last year's [f. or neut. pl.]'[459]), not single labialized consonants /C^{w}/. Yet it has been hypothesized by some scholars that they are remnants of a category of signs denoting labialized consonants in Linear A.[460] This hypothesis provides a welcome explanation as to why Linear B, which belongs to a family of scripts typologically prone to underrepresent consonant clusters, would possess signs that structurally are C*w*V, i.e. CCV. If these signs originally represented labialized Minoan consonants /C^{w}/, then they were devised for monophonemic consonants with secondary articulation, not biphonemic sequences /Cw/.[461] In other words, they would be actual CV signs. The same rationale applies to the syllabograms *ra*$_2$, *ro*$_2$ and *ta*$_2$, as discussed in 3.2.3.2.4: possibly, these series represented palatalized consonants /C^{j}/ in Linear A,[462] but were recycled for /Cj/ sequences when the script was adapted to Mycenaean Greek.

This scheme faces the difficulty that the only "labialized" sign attested with certainty in Linear A so far is *nwa*, and only once.[463] Sign LA *87 = *twe*$^{??}$ is attested twice in one document, where it is used strictly a logogram, so possibly it was not phonographic at all in the Minoan script.[464] This obstacle is mitigated by the small size of the corpus of Linear A (more documents might yield signs hitherto unattested), but another account is possible for the use of *tw* and *dw* series in Linear B. The redeployment of LA C^{W}V signs in Linear B has been explained as being at least partly motivated by their usefulness for abbreviating /CwV/ sequences in the extremely productive class of Greek formed with suffixes *-wos*/*-us* (perfect participial) and *-went* (adjectival), e.g. *o-da-twe-ta* /odatwenta/ 'toothed (said of wheels and cloths)'$^{(?)}$ or *te-mi-dwe* /termidwen/ 'provided with *termis* (edge, fringe?)',[465] which are quite recurrent in the type of lexical material recorded by the Mycenaean scribes.[466] Thus, some Linear B C*w*V signs may have been *ex novo* Mycenaean creations added to a smaller group of inherited Linear A C*w* signs, which so far is represented only by *nwa*. We have seen in

[459] *DocMyc*^{2}: 571.
[460] First postulated by Palmer (1955: 36-45; 1963: 38-39).
[461] B. Davis (2014: 237) notates the sound of Linear B as /n^{w}/ and [n^{w}], yet in the IPA notation this would represent a labialized coronal nasal. LB *nwa* actually contains /nw/, a sequence of two phonemes, /n/ and /w/, and as such this is the transcription that will be used throughout this dissertation.
[462] See fn. 460.
[463] The first safe attestation of LA *nwa* (𐘀𐘀) appeared recently in inscription SY Za 4 from Kato Syme (Muhly and Olivier 2008, 207–208).
[464] HT 126b.2, b.3.
[465] *DocMyc*^{2}: 476, 563, 584.
[466] Palaima and Sikkenga (1999: 605). The authors add *-wot-* , a variant of *-wos* in the masculine and neuter, but this is a post-Mycenaean development (Szemerényi 1967: 8-9).

2.2.3.2 that LB *dwo* was possibly invented by Greek-speaking scribes on a pun with the Mycenaean word for 'two', *dwo*. A Greek involvement would also explain why three of the four Linear B C*w*V signs contain the vocalic values *e* and *o*, strangely the ones that are defective in Linear A: these are the vowels implicated in the suffixes *-wos* and *-went*. Conversely, *nwa*, with *a* vocalism, is a survival from Linear A.

Following this line of reasoning, we can explore the possibility that Minoan possessed two labialized consonants, one (non-nasal) velar and one nasal, represented by LA *q* and *nw*.[467] Of the 24 languages in *UPSID* that have two labializes consonants five match this criterion: two have the prenasalized voiced velar stop /$^{n}g^{w}$/ (not an actual nasal) and /k^{w}/; two have /$ŋ^{w}$/ and /k^{w}/; and one has the velar nasal /$ŋ^{w}$/ and the voiced velar fricative /$ɣ^{w}$/.[468] Conversely, none of these 24 languages had the labialized coronal nasal /n^{w}/ in their inventory. This is actually unsurprising: crosslinguistically, the phoneme /n^{w}/ is *extremely rare*.[469] Of the parallels in the *UPSID* sample, the inventories with /$ŋ^{w}$/ and /k^{w}/[470] compare best with the situation posited for Linear A. Yet there are obstacles to identifying /$ŋ^{w}$/ as the sound represented by LA *nwa*. Most languages with phonemic /$ŋ^{w}$/ have the non-labialized counterpart /ŋ/ as a phoneme as well.[471] To the best of my knowledge, the relation between the presence of these phonemes in a language and the likelihood that they will be represented in writing has never been studied, but we can mention Avestan as an example of an ancient tongue whose writing system (an alphabet) distinguished both /$ŋ^{w}$/ and /ŋ/.[472] We may therefore suspect that Linear A would have represented the two sounds if Minoan possessed them. Even if we assume that two whole nasal series are waiting to be discovered among the untransliterated signs of Linear A, the fact remains that LA *nwa* is attested only one in a corpus comprising ca. 7,400 signs, a distribution which is consistent with a marginal sign, rather than one that rendered a widely-used phoneme of Minoan. Crucially, while *nwa* (𐘀) is a hapax in Linear A signs and a rare sign in Linear B, their formal counterpart in Cretan Hieroglyphic, sign 006 (𓐀, 𓐁), is somewhat more frequent: it attested twelve times in a corpus of ca. 1000 signs. This can be interpreted as an

[467] We have seen that sign 87/*twe* was possibly only logographic in Linear A. The scenario of a third labialized consonant in Minoan, namely a coronal, is typologically unlikely. On one hand, *UPSID* provides no case of a language with a *non-nasal velar*, a *nasal* and a *voiceless coronal* as its three labialized sounds. On the other hand, in languages with multiple labialized consonants the majority of these tend to be velars, or velars and uvulars. Coronal stops such as /t^{w}/, /t^{wh}/, and /d^{w}/ are exceedingly rare: /t^{w}/: 2 or 0.44% of the *UPSID* languages and 35 or 1.62% of the *PHOIBLE* inventories; /t^{wh}/: 1 or 0.22% in *UPSID* and 1 or 0.04% in *PHOIBLE*; /d^{w}/ 2 or 0.44% in *UPSID* and 19 or 0.88% in *PHOIBLE*. This last datum lends support to the idea that *twe*, *two* and *dwo* are innovations of Linear B, not a leftover of Linear A.

[468] Another interesting typological-statistical datum: if a language has one labialized nasal, frequently it is /$ŋ^{w}$/ (14 out of 21 cases in *UPSID*).

[469] /n^{w}/ is present in only 2 (0.44%) of the *UPSID* languages and in 24 (1.11%) of the *PHOIBLE* inventories. Besides being infrequent, it seems geographically circumscribed: to the best of my knowledge, all documented cases are in Subsaharan Africa.

[470] The two *UPSID* languages whose only labialized consonants are /$ŋ^{w}$/ and /k^{w}/ are Hopi (a Uto-Aztecan language of North America) and Isoko (a Niger-Congo language of southern Nigeria).

[471] This is true of 15 out of 17 *UPSID* languages (88.2%) that have /$ŋ^{w}$/.

[472] Skjærvø (2009: 52, 56-57).

indication that in the language of Cretan Hieroglyphic 𐄪 → *nwa*[??] represented a phoneme on its own right, but in Linear A (which quite possibly derived from the latter script) the sign was relegated to a superfluous position, which it maintained in Linear B. Quite probably then, in Linear A it was just an alternative to *nu-w*V for spelling the cluster /nw/.[473]

The other implication is that, after all, Minoan may have had only one labialized consonant, represented by LA *q*. Thus, the following statistic becomes meaningful: of the fourteen languages of *UPSID* with only one labialized phoneme, one has /k^{wh}/, one has /n^{w}/, two have /ŋ^{w}/, but ten have /k^{w}/. In addition, all of the ten languages that have /k^{w}/ as their single labialized consonant have /k/ as well. This reinforces the notion that /k/ and /k^{w}/ are likeliest interpretations of LA *k* and *q*.[474]

This concludes our survey of the Linear A stop series. The above hypotheses are summarized in Table 3.39.

Table 3.39: Proposed interpretation of Linear A stop series and their adaptation in Linear B.

LA series	**Minoan pronunciation**	**LB series**	**Mycenaean pronunciation**
t	/t/	*t*	/t, t^{h}/
d	/d/	*d*	/d/
p	bilabial stop, most likely /p/ or /b/	*p*	/p, p^{h}/
p_2	labial fricative, most likely /f/	p_2	/p^{h}/
k	/k/	*k*	/k, g, k^{h}/
q	/k^{w}/	*q*	/k^{w}, g^{w}, k^{wh}/

3.2.3.2.2 The *z* series

As with other series, the interpretation of the Minoan pronunciation of LA *z* depends on the pronunciation of Mycenaean *z*, which has been the subject of an intense debate since the decipherment of Linear B.[475] Two types of evidence contribute to the elucidation of this series: etymological and internal.

The Mycenaeans used LB *z* to represent the outcomes of the *palatalization* of Proto-Greek initial */j-/, as well as the reflexes of the Proto-Greek sequences */dj/, */gj/ and */k$^{(h)}$j/ (Table 3.40).

[473] That /nwV/ sequences were possible (albeit rare) in Minoan is suggested by sequences like LA *nu-wi* and *ri-su-ma-nu-wi*, both in text HT 115.
[474] It should be noticed that no matter the number of velars in Minoan, it is always most likely that /k/ was one of them. Thus, /k/ is part of the phonological inventory of: 27 of the 29 *UPSID* languages that have *only one* velar; 103 of the 108 *UPSID* languages that have two velar phonemes; 137 of the 151 *UPSID* languages that have three velars; and 64 of the 72 *UPSID* languages that have four velars.
[475] See recently Morpurgo Davies (2012: 514-516).

Table 3.40: Proto-Greek sources of Mycenaean *z*.[476]

Source	Proto-Greek	Mycenaean	
		Spelling	Meaning
*/j-/	**jeugo-* 'yoke'	*ze-u-ge-si*	'pairs (of oxen) (dat.)'
*/dj/	**(k^{w})tr̥-pedja* 'four-footed'	*to-pe-za*	'table'
*/gj/	**megjōs* 'larger, older'	*me-zo*	'larger, older'
*/kj/	**kakjos-es*	*ka-zo-e*	'bad (pl.)'

This indicates that LA *z* transcribed both a voiced sound and its voiceless counterpart, and that these two phonemes had to be [c, ʝ] or more advanced stages of palatalization. Our knowledge about this series is supplemented by what distinguishes it from the LA *s* series. The latter was certainly a fricative sibilant /s/,[477] representing the reflex of Proto-Greek */s/ in certain environments, as well as the outcome of the assibilation of Proto-Greek sequences */t$^{(h)}$j/ and */-nt-/ before final /-i/, which most likely at this stage was geminate */ss/ (Table 3.41). Two examples of **kj* > *s*, *pa-sa-ro* and *wa-na-se-wi-ja*,[478] have been put forward, but they are doubtful.[479]

Table 3.41: Proto-Greek sources of Mycenaean *s*.[480]

Source	Proto-Greek	Mycenaean		
		Spelling	Pronunciation	Meaning
*/s/	**enk^{h}usēwes*	*e-ku-se-we-*	/enk^{h}usēwes/	'funnels'
*/t(h)j/	**totjos*	*to-so*	/tossos/	'so much, so many'
*/nt^{h}i/	**Korint^{h}ia-*	*ko-ri-si-ja*	/Korinsiā/	'Corinthian (f.)'
*/nt/	**didonti*	*di-do-si*	/didonsi/	'they give, deliver'

Hence, the palatalization of these groups in Mycenaean Greek was more advanced than that of */j, d^{j}, g^{j}, k^{j}/, which cannot have gone beyond the affricate stage to the fricative one at this point in time. This means that at most LB *z* represented [ʦ, ʣ].

[476] *DocMyc*^{2}: 389. In some cases, LB *z* does not correspond to later Greek ζ: cf. e.g. *ka-za* 'made of bronze' (< **kalk-ja*; cf. Greek χάλκειος), *ka-zo-e* 'of bad quality' (< **kak-jos-es*; cf. Greek κακίων), *su-za* 'fig tree' (< **suk-ja*; cf. Attic συκῆ and Doric συκέα) and *a*$_{3}$*-za* 'of a goat' (< **aig-ja*; cf. Greek αἰγέα). These Mycenaean forms show etymological **kj*, **gj* > *z* where the adjective suffixes *-ja*, *-jos*, *-jon* intervened, but in the dialects of the 1st millennium the original forms seem to have been replaced through analogy and other secondary processes.

[477] Mycenaean /s/ appears to have had a voiced allophone [z] in certain contexts, including e.g. before [m]. This is deduced from cases in which the sibilant is irregularly spelled: cf. LB *si-mi-te-u* /zmint^{h}eús/ instead of ***mi-te-u* and *do-so-mo* /dozmos/ instead of ***do-mo* (see Heubeck 1971: 120).

[478] *DocMyc*^{2}: 80.

[479] See Heubeck (1971: 117-118), with references.

[480] *DocMyc*^{2}: 68, 73.

The other central topic of the debate is a peculiar phenomenon: whenever LB *z* series alternates with another series of the script, that series is LB *k* (Table 3.42).

Table 3.42: Linear B words in which the *z* and *k* series alternate.

***z* series**	***k* series**	**Meaning and etymology**
*a-**ze**-ti-ri-ja*	*a-**ke**-ti-ra*$_2$	Either /askētriai/ ‘practitioners of a trade’[481] or /akestria/ ‘sempstress’.[482]
***ze**-i-ja-ka-ra-na*	***ke**-i-ja-ka-ra-na*	Literally ‘Spring (/krānā/) of *Ke-e*’, *ke-e* being a place-name at Pylos.[483]
*a-no-**ze**-we*	*a-no-**ke**-we*	MPN of obscure origin (perhaps related to *a-no-ke-wa* “prob. occupational term or title”); a Greek etymology is not excluded.[484]
*ko-**za**-ro*	*ko-**ka**-ro*	Both MPNs, but the equation is not assured.[485]

The alternation *ko-za-ro* ~ *ko-ka-ro* is doubtful, and even Ventris and Chadwick have proposed it with a question mark. Hence it would seem that the LB *z* ~ *k* alternations are actually restricted to *ze* ~ *ke*. The differing attempts at explaining the *z* ~ *k* alternations coincide in one point: they only make sense if these two syllabic series represented a sound close to the value of the other. Because the interchanging occurs only before *e*, Heubeck and others have suggested that Mycenaean /k/ was allophonically *fronted* before front vowels.[486] *Velar-fronting* is a widespread phonological phenomenon whereby [k] and other velar obstruents, when followed by a front vowel or /j/, undergo progressive palatalization ([k^{j} → cɕ]) and assibilation ([cɕ → s]) and move forward along a continuum of phonemes:[487]

[k] > [k^{j}] > [c] > [cç] > [cɕ] > [tɕ] > [ʧ] > [ʦ] > [s]

[481] */askētriai/ could be of non-Greek origin, but not necessarily, since it is related to ἀσκέω ‘to work raw materials, to form by art’. B. Davis (2014: 221, fn. 1232) cites Frisk’s (1955: 1.163-164) inability to provide an etymology in defense of a non-Greek origin. Differently, Chantraine (1991) apud Beekes (2010: 150) connects ἀσκέω to ἀσκός ‘skin, hide’, implying that the verb originally meant ‘to prepare a skin’. But the point may well be moot: even if the word was originally loaned there is no reason to assume it was not fully integrated into Greek phonology.
[482] *DocMyc*^{2}: 529.
[483] Cf. *DocMyc*^{2}: 552.
[484] See Aura Jorro (1985: 68) for a survey of tentative interpretations, the most promising of which is arguably Deroy’s */Anoigeús/ (dat.) ‘Opener’.
[485] *DocMyc*^{2}: 555, 557.
[486] Heubeck (1971: 122) and Viredaz (1983: 151, fn. 125). See already Bartoněk (1964: 99).
[487] Manolessou and Pantelidis (2013: 273). Velar-fronting is a widespread phenomenon across languages: in the IE family it is well-attested in the history of Romance (cf. Latin CENTU ['kento] > Italian *cento* ['ʧento], Portuguese *cem* ['sẽj̃]), Slavic, and Indo-Aryan languages (see e.g. W. S. Allen 1957: 115; Recasens and Espinosa 2009: 189). The reason is that it is “physiologically motivated”: velars are pronounced with the dorsum of the tongue placed at the back of the mouth (velum), while front vowels are pronounced with the front of the tongue positioned more forward; thus, when a front vowel occurs after a velar, the articulation of the latter is pushed forward (see B. Davis 2014: 225).

Thus, LB *k* = /k/ would have been fronted to *at least* [kʲ] before *e*, while at the same time the voiceless phoneme represented by LB *z* lied somewhere between [c] and [ʦ] (see above). The allophonically fronted *k* and the sound of *z* would therefore have been close enough in terms of articulation as to motivate the hesitation between the two series in spellings. The hypothesis requires that the words showing the alternation be native Greek, or at least loanwords fully integrated into the Mycenaean phonological system. Differently, Davis maintains that they rather reflect alternative Mycenaean strategies for spelling loanwords from Minoan containing a phoneme—most probably the sound behind LA *z*—that lied between fronted *k* and *z*. However, Table 3.42 shows that this is not necessarily the case.

We must also assess a piece of external evidence. One of the Aegean toponyms inscribed at the mortuary temple of Amenhotep III (r. 1382-1344 BCE) at Kom el-Hetan is *mḏn*, which scholars have interpreted as a reference to Messene, in the southwestern Peloponnese. Thus *mḏn* equates with LB *me-za-na* (= Doric Μεσσάνα and Attic Μεσσήνη). Davis draws on the fact Egyptian *ḏ* was also used to render Hittite *z*, universally interpreted as representing the affricate /ʦ/, to argue that in the mid-14th century BCE the voiceless sound of LB *z* was already pronounced /ʦ/.[488] However, Egyptian *ḏ* is interpreted by specialists as a voiced palatal stop /ɟ/ or a palatal ejective [cˀ].[489] Since no sibilant affricate is reconstructed for the sound system of New Kingdom Egyptian, it stands to reason that, as a palatal obstruent, *ḏ* would be the optimal choice for LB *z* regardless of which sound in the continuum between [c] and [ʦ] it represented. Moreover, that *ḏ* transcribed Hittite /ʦ/ does not on its own demonstrate that LB *z* was also /ʦ/.

In any case, Heubeck's argument that /ʦ, ʣ/ are the most probable pronunciations of LB *z*,[490] which he bases on the relative chronology of the processes of assibilation in Greek, is compelling. Resorting to the interpretation of the sounds of LB *z* as /ʦ, ʣ/, the assumption that words with alternating *z* ~ *k* are "Pre-Greek", the Distinctive Feature Theory, and language universals, Davis argues that the likeliest candidate for LA *z* is /ʧ/.[491] Yet since none of the sounds in the continuum [c, ɟ → ʦ, ʣ] can be fully excluded, I think it is more cautious to accept just that LA *z* represents a sound close to any of the phonemes along that continuum. This leaves us with a broad fan of possibilities, meaning that to be more prudent the sound in question should be described as likely a *palatal stop*, *palatal affricate* or *sibilant affricate*.

[488] B. Davis (2014: 221-224).
[489] Loprieno (1996: 33, Tab. 3.1); Loprieno and Müller (2012: 107, 112-113). J. P. Allen (2013: 50) describes *ḏ* as a "palatalized apical" stop (/ɟ/ or /gʲ/?).
[490] Heubeck (1971: 122).
[491] Davis (2014: 226-230).

3.2.3.2.3 The *r* series

It has already been mentioned that *LA r* was borrowed into Linear B to represent not one, but the two Mycenaean liquids, /l/ and /r/. The "failure" of the Mycenaean script to distinguish between the lateral and the non-lateral phoneme has led to the suggestion that it betrays to the lack of a similar contrast in the language of Linear A, i.e. Minoan would have had a single liquid.[492] Taking a different stance, Davis gathers a number of arguments in favor of the existence of two liquids in Minoan, one lateral and one "rhotic",[493] which Linear A would have underrepresented just as in the case of the Mycenaean script.[494] First, Davis draws on a universal formulated by Justeson that states that "few writing systems distinguish all their phonemes",[495] which in his opinion makes it possible that Linear A did not distinguish between two phonemic liquids.[496] The second argument starts with the observation that, if Minoans had only one liquid, it was pronounced both as a lateral /l/ and a non-lateral /r/, because, as shown by 1st millennium BCE alphabetical spellings, "Pre-Greek" Cretan toponyms were adapted into Greek with both λ and ρ. This in turns leads him to consider three possibilities:

(1) LA *r* was pronounced as /l/ in some positions and as /r/ in others, whence the phoneme had conditioned allophones; a case in point is Japanese, whose single liquid is realized as a lateral [ɭ] before back vowels [o, u], but as a rhotic alveolar flap [ɾ] before front vowels [i, e]. Davis excludes this possibility since Cretan pre-Greek toponyms show no such distribution (cf. Λισσός vs. Ρίθυμνα, Ρυτιασσός vs. Λύκτος, and Λατώ vs. Ραμνοῦς).

(2) The Minoan pronunciation of the single liquid varied freely between lateral and non-lateral/rhotic.

(3) The single liquid was a phoneme which, lateral or not, was close to Greek /l/ and /r/ in similar measures. B. Davis excludes possibilities (2) and (3) due to the fact that alternations between λ and ρ (in the same word) are extremely rare in Cretan place-names and "pre-Greek" words as a whole.

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[492] See e.g. Chadwick (1969: 94) apud B. Davis (2014: 232).
[493] *Rhotic* or "r-sound": a type of sound "in which there is a single or repeated brief contact between the tongue and a point on the upper surface of the vocal tract, i.e. principally apical trills, taps and flaps" (Ladefoged and Maddieson 1996: 182), i.e. [r], [ɾ], etc. Other definitions of rhotics may include the uvular trill [ʀ].
[494] B. Davis (2014: 232-234).
[495] Justeson (1976: 61).
[496] A possible case in point is the Egyptian hieroglyphic script, which writes /l/ with *n*, *r*, or the digraphs *nr* and *3n*. However, it is possible that /l/ was not phonemic in ancient Egyptian, but rather an allophone of /n/ and /ɾ/ in certain contexts. See Loprieno (1996: 31), Loprieno and Müller (2012: 106), and J. P. Allen (2013: 39-42).

His final argument relies on the linguistic universal according to which languages that do not contrast /l/ and /r/ also disallow onset consonant clusters of obstruent + liquid.[497] Davis thinks this cannot be the case of Minoan, as, again, the Cretan place-names he lists do allow for onset clusters of this type: cf. **Πρ**αισός, **Γλ**ῆνος, **Κρ**αυσόσσι, *inter alia*. In this way, he upholds that LA *r* represented two Minoan liquids, whose likeliest pronunciations according to typological statistics were [l] (lateral approximant) and [r] (alveolar trill).[498]

One counterargument that can be put forward is that B. Davis relies on Cretan "Pre-Greek" place-names as attested in 1st millennium BCE alphabetical Greek; yet only a small number of these are actually attested in the Late Bronze Age scripts. We simply do not know whether all of them actually go back to the 2nd millennium BCE and, if so, whether they had the same basic phonological form at that stage. Eteocretan is the proof that at least one non-Greek language was spoken on the island after the Mycenaean period and non-Greek place names may have sprung in post-Mycenaean times. For the sake of argument, it is possible that CRV- sequences (C = obstruent and R = liquid) in late alphabetical place names were originally CVRV- and developed into clusters only after the end of the Bronze Age: e.g. Πραισός (< **K^{w}rais-*) might come from earlier **K^{w}Vrais-* through accent-driven syncope.[499]

Thus, less problematic conclusions can be reached if we limit the list of non-Greek Cretan toponyms to those attested in either Linear A or Linear B. As seen in Table 3.43, these are only six.

Table 3.43: Cretan toponyms with liquids attested in the Late Bronze Age syllabaries.[500]

Related Linear A sequences	**Linear B**	**Mycenaean pronunciation**	**Alphabetical Greek**
—	*a-pa-ta-wa*	/Áptarwa/	Ἄπτερα
(cf. *-du-pu$_2$-re*)	*da-pu/pu$_2$-ri-to-*	/Dap^{h}úrint^{h}os/	λαβύρινθος
—	*qa-ra-i-so*	/K^{w}raisós/(?)	Πραισός
—	*ru-ki-to*	/Lúkistos/(?)	(**Lúkstos* >) Λύκτος
su-ki-ri-ta	*su-ki-ri-ta*	/Súgrita/	Σύβριτα
a-tu-ri-si-ti(?)	*tu-ri-so*	/Túlisos/	Τύλισος

[497] Archibald (1998: 207-208), cited by B. Davis (2014: 232, fn. 1295).
[498] B. Davis (2014: 234).
[499] Even Archibald (1998: 207), who, as we have seen, is cited by B. Davis (2014: 232, fn. 1295) in his argument against a single liquid in Minoan, reports a case that echoes this possibility: Akan (Western Africa) has only one liquid, /r/, but beside C+glide and homorganic nasal+C clusters it allows [pr] and [fr] clusters that possibly derive from CVRV forms. In other words, languages with one liquid and restrictions for clusters may feature special stop+liquid groups from previous CVCV sequences.
[500] This list is based on *DocMyc*^{2}.

This is not much to go with, but LB *tu-ri-so* = Τύλισος and *da-pu*/*pu*$_2$*-ri-to-* = λαβύρινθος do suggest that Greek /l/ and /r/ can appear in the same position, namely after accented /u/ and before /i/. This seems to corroborate Davis' hypothesis that Minoan did not have a single liquid with complementary distribution of lateral and rhotic allophones. In turn, this supports his idea that Linear A underrepresented two phonemic liquids, /l/ and /r/. However, arguably such cases are not common in writing systems of the world. I would like to point that if the Minoan script indeed had a "defective" *r* series, this underrepresentation may have been inherited from a parent script, devised for a language or dialect. Is it possible that this was the case with Cretan Hieroglyphic? The question whether LA *r* represents one or two liquid phonemes remains unresolved, although it seems likely that /l/ and /r/, whether phonetic or allophonic, were both part of the phonological inventory of a non-Greek Cretan language.

3.2.3.2.4 The "palatalized" series

This concerns the LA r_2 and t_2 series, represented by signs *ra*$_2$ and *ta*$_2$.

The value /rja, lja/ was early on established for LB *ra*$_2$ because of the alternation *a-ke-ti-ra*$_2$ ~ *a-ke-ti-ri-ja* (see previous section for the interpretation of this word) and well-identified Greek words such as *pe-ki-ti-ra*$_2$ /pektriai/ 'wool-carders (f.)' and *ra-pi-ti-ra*$_2$ /raptriai/ 'sewing-women, sempstresses (f.)'.[501] The existence of *ro*$_2$ /rjo, ljo/ confirms the interpretation and strengthens the idea that these signs were useful for Mycenaean scribe because they facilitated the spelling of numerous occupational terms ending in *-ja*/*-jo*, so common in the tablets (especially in the Pylos Aa and Ab series). LB r_2 is used for the etymological sequence **rj* as well as for synchronic sequences /riV/, presumably /rjV/ in fast-speech. This resembles the use of the *z* series, which denotes etymological **kj* and **gj* beside synchronic /kiV/ and /giV/ (see 3.2.3.2.2). Conversely, for the lateral so far only (probable) examples of r_2 = /liV/ are attested (see e.g. fn. 393).[502]

More problematic is the case of *a-ke-ra*$_2$*-te*, generally interpreted as an aorist participle 'collecting, gathering' (nom. pl. m.),[503] from **agersantes*, with a seemingly exceptional use of *ra*$_2$ for representing a geminate /-rr-/ from etymological **-rs-*.[504]

Thus, LB r_2 covers sequences with both the rhotic and lateral Mycenaean phonemes /r/ and /l/. Together with the fact that it denotes /riV/ and /liV/, and not simply the etymological outcome /rj/ and /lj/, such symmetry suggests that in Linear A, the corresponding series transcribed one or two palatalized liquids (such as /l^j/, /r^j/, etc.), and not a palatal liquid, for example the approximant /ʎ/.

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[501] Ventris and Chadwick (1953: 90ff).
[502] Lejeune (1972: 155-156).
[503] *DocMyc*^{2}: 529.
[504] Lejeune (1972: 156); Morpurgo Davies (2012: 519).

The interpretation LB *ta*$_2$ = /tja/ is generally acknowledged, but not beyond question if we take into account the lack of solid examples with native Greek words. It seems that LB *ra-wa-ra-ta*$_2$ is a variant of *ra-wa-ra-ti-ja* ~ *ra-u-ra-ti-ja* reflecting an adjective (/Lawrant^{h}ia/?) from a place-name *ra-u-ra-ta* ~ *ra-wa-ra-ta* /Lawrant^{h}a/ (cf. Greek λαύρα 'passage' and Mt. Λαύρειον in Attica).[505] The interpretation of *ko-ro-ta*$_2$, a descriptive of cloth, is not clear. The word is approached from *ko-ro-to*, which qualifies wool and has been tentatively interpreted as /k^{h}rōstos/ 'died', but *ko-ro-ta*$_2$ would suggest an ending /t$^{(h)}$ja/, not the expected neut. pl. /k^{h}rōsta/. For *ko-ro-to*, Ruijgh compared Greek κλωστός 'spun', which presents the same morphological problem.[506] Melena contributes to the debate by proposing *ta*$_2$ = /sta/, which is uneconomical in that it would endow the sign with a CCV value that contradicts present knowledge of the structure of the syllabary. The rest of the words in the dossier do not provide conclusive interpretations either, and thus are unhelpful. In conclusion: although likely, the interpretation of LA *ta*$_2$ as representing a palatalized stop, such as /t^{j}/, is not certain; other interpretations are possible, e.g. the palatal stop [c].

Let us now recapitulate: *r*$_2$ goes back to a Linear A series that probably represented one or two palatalized liquids; *t*$_2$ might represent a voiceless palatalized coronal stop, but this is uncertain. As a result, Minoan may have had one, two or even three palatalized phonemes, which leaves us with many uncertainties. Nonetheless, the few clues we have do allow us to test interpretative scenarios as regards typological likelihood. Languages of the world with both /l^{j}/ and /R^{j}/ (here meaning any palatalized rhotic) are extremely rare, but where they exist, they have numerous other palatalized phonemes as well.[507] As there is no evidence for many extra C^{j}V syllabograms in Linear A, nor are sequences of the type C*i*-*j*V abundant,[508] it seems unlikely that Minoan possessed a number of other palatalized phonemes if its inventory. More probably, then, *r*$_2$ represented only one palatalized liquid.

As a consequence, the following two scenarios emerge as most probable. Minoan either possessed (1) one palatalized consonant represented by *r*$_2$ (with *t*$_2$ rather denoting a palatal obstruent like [c] or similar); or (2) two palatalized consonants represented by *r*$_2$ and *t*$_2$. The second is the likeliest, as languages with a liquid as their only palatalized consonant are exceedingly rare.[509] *UPSID* does provide a hint of support for it: one of the four languages in the database that possess two palatalized

[505] *DocMyc*^{2}: 149; Aura Jorro (1985-1993: 231-232).
[506] See Aura Jorro (1985-1993: 386).
[507] Only five or 1.11% of the *UPSID* languages (Bulgarian, Lithuanian, Russian, Nenets, and Modern Irish) and six *PHOIBLE* inventories (0.28%). They all have more than eight other palatalized phonemes. Notice also that presence of multiple palatalized phonemes is specially prolific in North-Central Eurasia.
[508] I have managed to find only fifteen examples C*i*-*j*V sequences in the whole corpus of the script.
[509] Only one *UPSID* language, Muinane (South America), has a single palatalized phoneme that is a rhotic, which is ambiguously described "palatalized voiced alveolar r-sound", but a different phonological description of this language found in *PHOIBLE* specifies a flap /ɾ^{j}/ and includes the palatalized coronal stops /t^{j}/ and /d^{j}/. *PHOIBLE* includes at least two other cases: Lese (Democratic Republic of Congo), which has only [ɾ^{j}] and Upper Guinea Creole (Guinea-Bissau), with only [l^{j}].

phonemes, Selkup (Uralic, Samoyedic), compares well to what we would expect of Minoan, as it features /lʲ/ and /tʲ/.[510] Notice that the presence of /tʲ/ in Minoan would be uncontroversial: according to *UPSID*, this is the most common palatalized phoneme in the languages of the world.[511]

In the light of the data available at present, the most likely interpretation of r_2 and t_2 is as follows. LA r_2 represented *one palatalized liquid*, either a rhotic (a flap?) or a lateral.[512] Yet, when it was borrowed into Linear B it came to be used for Greek sequences that included laterals and rhotics, namely /lj/ + /liV/ and /rj/ + /riV/. This may have been due to the influence of the *r* series, which represented both /l/ and /r/. As for LA t_2, it most likely denoted /tʲ/, or a similar consonant, and was borrowed into Linear B to represent synchronic /t$^{(h)}$j/.

3.2.3.2.5 The *m*, *n* and *s* series

The interpretation of LA *m* and *n* as bilabial and coronal nasals [m] and [n], respectively, is uncontroversial. As stated by Davis, the two sounds occur together in the vast majority of the world's languages: 423 of the 451 languages of *UPSID* (93.8%) possess both [m] and [n].

The existence of one *s* series in Linear A suggests that Minoan possessed only one sibilant fricative. In the sample of *UPSID*, when a language contains only one sibilant fricative (148 cases), most often it is the voiceless coronal [s] (133 languages = 89.86%), occasionally it is the voiceless palato-alveolar [ʃ] (14 languages = 9.45%), and once only it is the palatalized coronal [sʲ] (0.67%). Thus, the likeliest candidate for the sound behind LA *s* is [s].

Davis notes that Cretan toponyms are consistently spelled with Egyptian *š* = [ʃ] in the 14th century BCE Kom el-Hetan inscription, which could be seen as an indication that LA *s* = [ʃ]. However, he cites an old language universal which states that "if a language contains /s/ but not /ʃ/, then the pronunciation of the /s/ tends not to be sharply differentiated from [ʃ]", and so his proposal is that Minoan s transcribed a phoneme /s/ whose actual pronunciation was closer to [ʃ].[513] This universal, originally formulated originally in the early 1940s, seems to refer to what some scholars would nowadays describe as a "retracted" or "hushing" pronunciation of /s/, notated as [s̠], which is peculiar e.g. to various languages and dialects of the northern Iberian Peninsula.[514]

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[510] Of the four *UPSID* languages with two palatalized phonemes, only Selkup (Uralic, Samoyedic) looks comparable to what we would expect in Minoan, as it has /lʲ/ and /tʲ/.

[511] It is found in 16 or 3.55% of the languages in the database (notice that *UPSID* counts separately the alveolar, alveolar-dental and dental versions of this sound).

[512] It is possible that the sound of LA r_2 was the palatal lateral approximant /ʎ/, which some languages have as an allophone of the sequence /lj/ or as a variant of /lʲ/.

[513] B. Davis (2014: 235) citing Jakobson (1941: 55).

[514] Adams (1975: 282-283, n. 1). This retracted [s̠] is distinct from [s] in that it is pronounced with "the apex of the tongue placed at a right angle to the alveolar ridge (generally more toward the back side of the ridge), the body of the tongue being low and slightly concave".

Given its articulatory features, speakers of languages with both [s] or [ʃ], as is the case with Egyptian, may perceive [s̱] as close to their [ʃ],[515] which may account well for the Egyptian spellings of Cretan toponyms. Importantly, this whole venue of explanation starts with Davis' assumption that Egyptian apprehended the Cretan place-names directly from Minoan. Yet given that the Kom el-Hetan inscription is contemporary with the Mycenaean dominance of Crete, Greek may have served as the intermediary source for the inscription's list, in which case Egyptian *š* would actually reflect a Mycenaean Greek sound.

Therefore, /s/ remains the most probable interpretation of LA *s*.

3.2.3.2.6 The glide series

Davis argues that LA *j* and *w* most likely represent approximants, namely the palatal /j/ and the labiovelar /w/, because these are the most common approximants in human languages.[516]

As regards LA *w*, and besides the typological argument, the approximant /w/ is suggested not only because the series was borrowed into Linear B to transcribe Greek /w/, but also because of its apparent alternation with a vowel /u/ in the pairs LA *qe-ra$_2$-u* ~ *qe-ra$_2$-wa* > LB *qa-ra$_2$-wo* 'MPN' and LA *a-ta-i-*301-wa-ja* ~ *ja-ta-i-*301-u-ja*. However, neither piece of evidence is probative. For example, the LA *u* ~ *w* in postvocalic position might reflect a morphophonemic alternation of [w] (as an allophone of /u/) with a fricative [v/β].[517] More interesting is LA *a-si-su-p**o-a*** vs. *a-su-p**u-wa*** (> LB *su-pu-wo* 'MPN'?),[518] which may point to realizations such as [-ʊa] ~ [-ua] or [-ua] ~ [-wa]. If this is the case, it would only make sense to resort to LA *w* if it represented a glide /w/, not a fricative /β/. Unfortunately, the beginning of the two sequences is not identical and it is not certain that they constitute variations of the same word.

LA *j* most probably represents a true palatal approximant /j/, rather than simply marking a transition between /i/ and another vowel in (-)*i-j*V strings. This is supported by the consistent use of the sign word-initially and between vowels that do not include *i*: cf. sequences with spellings such as *je-di* and *a-su-ja*,[519] rather than ***i-je-di* or ***a-su-wi-ja*. It remains the most likely interpretation, although other options are not impossible: cf. the Castillian voiced palatal fricative /ʝ/, spelled with the letter *y* (used

[515] Own knowledge.
[516] B. Davis (2014: 234): [j] occurs in 83.8% of the *UPSID* languages and [w] in 73.6% of them.
[517] Cf. Catalan *blau* [bław] 'blue (m.)' vs. *blava* [błaβa] ~ [błava] 'blue (f.)'.
[518] Texts where these forms are found: KH 9.1 (*a-si-su-po-a*) and ARKH 2.5-6 (*a-su-pu-wa*). For LB *su-pu-wo* (KN C 912), see *DocMyc*^{2}: 583.
[519] Texts where these sequences occur: *je-di* (HT 8.1; HT 36.1-2; HT 122 b.1; HT 140.1-2); *a-su-ja* (HT 11 a.3-4).

for /j/ in the orthography of other languages), and identified by speakers of Portuguese with their /j/.[520]

3.2.3.2.7 The vowels

Not much can be added to Davis' analysis of the Linear A vocalic signs. The default interpretation of LA *a*, *i* and *u* as /a/, /i/ and /u/, regardless of their exact articulation, can be maintained. The hypothesis that at least some instances of Minoan /e/ and /o/ are late developments from diphthongs is attractive, but still based on scanty evidence. Other possible phenomena are worthwhile noting, even if very tentatively:

– Pairs of Linear A sequences like *qa-ra$_2$-wa* ~ *qe-ra$_2$-u* and *ra-ti-se* ~ *re-di-se* may indicate a fronting of Minoan /a/ before a syllable with a front vowel /i/ or a palatal/palatalized consonant like *r$_2$*.[521]

– *ki-ri-ta$_2$* ~ *ki-re-ta$_2$* may point to some kind of accent-driven change (/ĭ/ > /ɪ/ > /e/) and *ja-di-ki-tu* > *ja-di-ki-te-te-* and *ja-su-ma-tu* > *wi-ja-su-ma-ti-ti* suggest two versions of the same suffix, *-e-te*/*-i-ti*, possibly displaying a similar phenomenon.

– One example of possible confusion between /a/ and /o/ occurs in each direction (LA *na-da-re* > LB *no-da-ro*, but LA *to-*49-re* > LB *ta-*49-ro*). It is tempting to think of a special vocalic sound that is low like /a/ and back like /o/, such as /ɑ/ or /ʌ/, but this needs not be the case.

– Davis has already written extensively on the tantalizing possibility of an accent-driven shortening of /u/ to /ə/ in fast speech, with the resulting Minoan sound being rendered with LB *a*. Yet it needs not be restricted to before a labial consonant: cf. LA *du-su-ni* > LB *du-sa-ni*.

It is important to highlight three facts about the behavior of the series *e* and *o* in Linear A, as established by Davis: (1) they are incomplete (cf. Table 3.9); (2) they are rarer than *a*, *i* and *u*; and (3) their positional distribution is different: e and o have a preference for the last two syllables of a sequence.[522] This behavior is not likely to be caused only by accidents of preservation and may hint at a morphophonemic origin of /e/ and /o/ as suggested by Davis. In any case, it is the first of these facts that has wider implications for Cypro-Minoan: as LA *e* and *o* were incomplete series, the creators of the Cypriot script may have been forced to innovate signs that were not contemplated in

[520] Own knowledge.
[521] For the sequences mentioned here see 3.2.1.
[522] B. Davis (2014: 240-242).

the template of Linear A, and this in turn may provide a partial explanation for why Cypro-Minoan *looks* so different.

3.2.3.2.8 Conclusions

Table 3.44 summarizes the results of the above discussion on the interpretation of the consonantal sounds of Linear A.

Table 3.44: Proposed approximations to the consonantal sounds of Linear A.

Series	Phonemes (Salient distinctive features)	Series	Phonemes (Salient distinctive features)
d	Voiced coronal stop /d/	*s*	Fricative sibilant, /s/ or /s̠/
j	Likely a palatal approximant /j/	*t*	Voiceless coronal stop /t/
k	Velar stop, most likely /k/	*w*	Likely a labiovelar approximant /w/
m	Bilabial nasal /m/	*z*	Palatal stop/affricate or sibilant affricate, /c, ɟ → ʦ, ʤ/
n	Coronal nasal /n/	p_2	Labial fricative, most likely /f/
p	Bilabial stop, most likely /p/ or /b/	r_2	Palatalized liquid, most likely /lʲ/ or /rʲ/
q	Most likely a labialized velar stop /kʷ/	t_2	Most likely a palatalized coronal /tʲ/
r	Rhotic, lateral approximant /l/, or both	*nw*	Biphonemic sequence /nw/

The set of hypothetical interpretations presented here is not too different from the conclusions of Davis (Table 3.35), except for two fundamental points involving the obstruents: the coronal *d* is interpreted not as a fricative /θ/, but as a stop /d/; and p_2 is not considered necessarily a bilabial fricative /ɸ/, but more likely a labiodental /f/ (without excluding the former). For the rest, the present scheme is mostly in agreement with Davis', although I do not delve too much into the possible allophonic realizations of each Minoan phoneme. For the purposes of this dissertation, the basic articulatory features of each sound represented by the Linear A syllabograms provide a sufficient basis for a cautious investigation of their fate in the derivation of Cypro-Minoan.

3.3 FROM CYPRO-MINOAN TO CYPRO-GREEK

3.3.1 The Cypro-Greek syllabary: an overview

The decipherment of Cypro-Greek (summarized in 1.1.1) revealed a syllabary developed for writing the ancient Cypriot Greek dialect and used for that purpose during

a large part of the 1st millennium. At times, at least one non-Greek language dubbed "Eteocypriot" was also represented with the script.

Cypro-Greek distinguishes stops only as per their articulation point, while "marked" features such as voicing and aspiration are underrepresented: thus *p* = /p, p^h, b/, *k* = /k, k^h, g/, and *t* = /t, t^h, d/.[523] Unlike Linear B, there are no exceptions for this feature in any of its syllabic series. Another aspect in which it diverges from the Mycenaean script is its use of two liquid series, *l* for the lateral /l/ and *r* for the rhotic /r/. Cypro-Greek includes a *j* series, fundamentally used to transcribe the consonantal transition from /i/ to another vowel, i.e. /iV/ > [ijV], spelled -*i*-*j*V, as Proto-Greek */j/ lost the phonemic status in the Cypriot Greek dialect.[524] Signs *xe* and *xa*, making up a theoric *x* = /ks/ series appear to be a late innovation of the script, as discussed in 3.3.3. An overview of the pronunciation of the consonantal series of Cypro-Greek is given in Table 3.45.

Table 3.45: Pronunciation of the consonantal series of Cypro-Greek.[525]

Syllabic series	**Realization**	**Syllabic series**	**Realization**
j	/j/	*r*	/r/
k	/k, g, k^h/	*s*	/s/
l	/l/	*t*	/t, d, t^h/
m	/m/	*w*	/w/
n	/n/	*x*	/ks/
p	/p, b, p^h/	*z*	/ʝj ↔ ʤ/ (voiced coronal affricate)

Cypro-Greek has two main varieties, used simultaneously in different regions of the island: the Paphian syllabary, which most of the time reads dextroverse and is mainly found around the Palaepaphos and surrounding areas in southwestern Cyprus (Tables 3.46-3.47); and the so-called "Common" syllabary, which mostly reads sinistroverse and is found across the other areas of the island (Table 3.48).[526] These two varieties differ only slightly in their sign repertoires, and the differences mainly concern the shapes of the signs, not their phonetic values (see below). The otherwise common and stable structure owes to the fact that both record the same language, Cypriot-Greek. It is to be noticed that non-Greek Eteocypriot, whose inscriptions mostly come from the

[523] *DGAC*: 46.
[524] *ICS*^{2}: 54, 71-72; *DGAC*: 119.
[525] Following in the main *DGAC*: 51, 119-235. On the value of the *z* series, see section 3.4.4.
[526] Most recently Steele (2013: 6) and Olivier (2013).

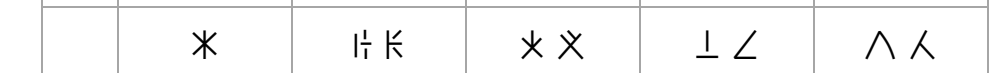
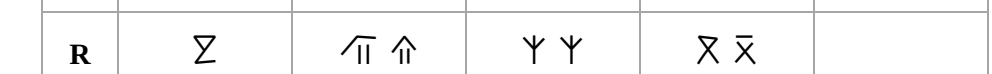
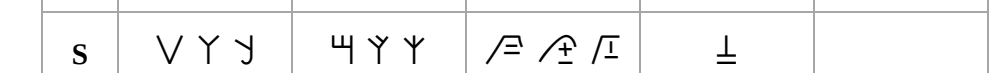
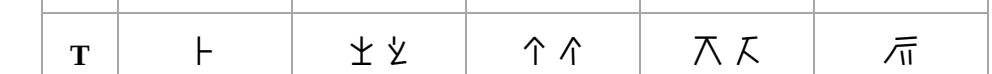
area of Amathus, on coastal southern Cyprus was written with the Common syllabary, not a special variety of Cypro-Greek devised for it.

Table 3.46: Paphian Cypro-Greek syllabary of the 6th century BCE.[527]

	A	E	I	O	U
	𐠀 𐠁	𐠂 𐠃 𐠄	𐠅 𐠆 𐠇	𐠈	𐠉
J	𐠊			𐠋	
K	𐠌 𐠍	𐠎 𐠏	𐠐 𐠑	𐠒	𐠓
L	𐠔	𐠕 𐠖	𐠗	𐠘	
M	𐠙 𐠚	𐠛 𐠜	𐠝	𐠞 𐠟	
N	𐠠	𐠡	𐠢		𐠣(?)
P	𐠤 𐠥	𐠦	𐠧	𐠨 𐠩	𐠪
R	𐠫	𐠬 𐠭	𐠮 𐠯	𐠰 𐠱	
S	𐠲	𐠳 𐠴 𐠵	𐠶 𐠷	𐠸	
T	𐠹	𐠺	𐠻	𐠼 𐠽 𐠾	𐠿 𐡀
W	𐡁	𐡂		𐡃 𐡄	
Z	𐡅(?)			𐡆 𐡇	

[527] According to Mitford and O. Masson (1982: 79, fig. 12), but only the main paleographical variants are represented.

Table 3.47: Late Paphian Cypro-Greek syllabary.[528]

	A	**E**	**I**	**O**	**U**
					
J					
K					
L					
M					
N					
P					
R					
S					
T					
W					
X					
Z					

[528] According to *ICS*[2]: 67, fig. 6 (see more recently the grid of Paphian forms in *DGAC*: 50, Tab. VI, which unfortunately is chronologically unspecified).

Table 3.48: Common Cypro-Greek syllabary.[529]

	A	E	I	O	U
					
J					
K					
L					
M					
N					
P					
R					
S					
T					
W					
X					
Z	(?)				

Since there is already universal agreement that Cypro-Greek was modeled on Cypro-Minoan, and since it can be fully read, the purpose of this section is to look at what we know about how the Cypro-Greek script emerged and what it looked like structurally and paleographically in its earlier period. The ultimate goal is to pave the way for the comparison with its parent script.

3.3.2 Cypriot writing between 1100 and 700 BCE

3.3.2.1 Historical-archaeological background

The period spanning from the beginnings of the LC IIIB to the start of the Cypro-Archaic (1100-750 BCE) is a source of anxiety for those dedicated to Cypriot epigraphy. Its relevance can hardly be overestimated, since it saw the creation of Cypro-Greek and the obsolescence of Cypro-Minoan, yet it is utterly barren in terms of

[529] *DGAC*: 49, Tab. V.

epigraphical material (see Table 3.49). In this, as Egetmeyer has noted, Cyprus is not alone. At least as regards languages written in alphabetical scripts (such as Greek, Phrygian and Carian), the Aegean and large parts of Anatolia are equally poor in inscriptional evidence in the Early Iron Age, and it is only from the late 8th century BCE onwards that material increases in numbers.[530] This shortage contributes, for instance, to our ignorance concerning where and when the Greek alphabet was invented,[531] and has certainly played a role in perpetuating the historical concept of "Dark Ages".

This unease is also intimately related to the old archaeological controversy concerning the transition period from the Late Bronze Age (LC IIC-IIIA) to the Early Iron Age (LC IIIB-CG I), i.e. 1300-1000 BCE, which revolves around the problem of the "Hellenization" of Cyprus.

Table 3.49: Geographical distribution of syllabic inscriptions in Cyprus from the LC IIIA to the CG III periods.

Area / Period	**LC IIIA**	**LC III**	**LC IIIB**	**CG I**	**CG II**	**CG III**
Enkomi (East)	21	9	6			
Kition (SE)	11	2	2	1		3
Idalion (SE)			1	1		
Palaepaphos (SW)				5		
Marion (West)						1

For archaeologists, the impact of the widespread Eastern Mediterranean "crises" of the late 13th and early 12th centuries BCE, connected to the so-called phenomenon of the "Sea Peoples", mark the beginning of the LC IIIA in Cyprus.[532] However, the consequences do not seem to have been homogenous island-wide. At least three key settlements, Enkomi, Kition and Palaepaphos, had occupations after the events at the turn of the 12th century BCE and some theorize that afterwards they centralized their authority over the surrounding areas, contributing to a process of regionalization.[533] We will see that from 1050-950 BCE onwards there is epigraphical and linguistic evidence for a presence of Greek immigrants in the island that otherwise is archaeologically invisible.[534] Former scholarship spoke of "colonization" by Mycenaean elements

[530] Egetmeyer (2013a: 107).
[531] Although there is a consensus that it was inspired by the Phoenician consonantal alphabet (directly, or via Phrygian), and many agree that this must have taken place around the 9th century BCE, there is no unanimity as regards location. Amongst several possibilities, Cyprus itself has been proposed (Woodard 1997), but this is founded on the unlikely idea that it was the complex *ks* syllabograms of Cypro-Greek that influenced the creation of the Greek alphabet with the *ksi* letter (Ξ), not the contrary. In the meantime, southern Anatolia is recently gaining favor (see Yakubovich 2015).
[532] Drews (1993: 11); Knapp (2008: 246).
[533] Iacovou (2005: 130); Knapp (2008: 247).
[534] Iacovou (2005: 130; 2008: 627; 2012: 209).

starting in the 13th century BCE, but a new narrative, more coherent with the archaeological evidence, has recently emerged which connects the arrival of Greek-speaking groups with the 12th and 11th century BCE social-economical "appeal" of Cyprus', in terms of copper resources and metallurgical industry, including "the art of the bronze smith" and "the production of the first carburised iron objects".[535] Perhaps it is not a coincidence that the first clearly Greek inscription (the Opheltas' spit, see next section) marks the ownership of a bronze implement.

The phase of 1100-700 BCE surely hides substantial political reconfiguration of the island's map. In the early 7th century BCE, an inscription of the Assyrian king Esarhaddon (680-669 BCE) informs us of the existence of ten Cypriot kingdoms: *Edi'il* (Idalion), *Kitrusi* (Khytroi?), *Siluwa* (Salamis?), *Pappa* (Paphos), *Silli* (Soloi?), *Kurī* (Kourion), *Tamesi* (Tamassos), *Qarti-ḫadasti* (Kition?), *Lidir* (Ledra) and *Nuriya* (Marion?).[536] At least five of these are ruled by individuals with Greek names, and so it can be surmised that the influx of Greek-speaking populations to the island contributed to the mentioned political reshaping that went on.

3.3.2.2 The material from Palaepaphos-*Skales* and the creation of Cypro-Greek

> *…the assessment of the role of Palaepaphos*-Skales *in the borrowing process and the transmission of the Cypro-Minoan script to a Greek-speaking environment is crucial.*
>
> S. Ferrara[537]

As Ferrara duly notes, the syllabic inscriptions found at the necropolis of Skales are crucial for understanding the obscure phase of 1100-700 BCE. The site is commonly known as Palaepaphos-*Skales*, as it is located about 850 m from the southeastern wall of the ancient city of Paphos (hence Palaepaphos or "Old Paphos"), which is the modern-day village of Kouklia. It was excavated in 1979, first in an uncontrolled fashion (Tombs 42-57) and later on systematically by V. Karageorghis. Its tombs, carved on the rocky plateau and dated from the 11th century BCE through the Hellenistic period,[538] yielded a small number of inscribed objects edited and discussed by É. and O. Masson: one bronze bowl (PPAP Mvas 001), three bronze spits or *obeloi* (PPAP Mins 001-003), and two stone slabs (PPAP Pblo 001-002).[539] We may add the short inscription recently-identified on a hematite cylinder seal (PPAP Psce 001).[540]

One of the most controversial questions of Cypriot epigraphy is the classification of PPAP Mins 001, most commonly known as Opheltas' spit, which was

[535] Iacovou (2012: 211-212), with references.
[536] Inscription Esarhaddon 001, *Nineveh 1*, v. 63-71. See Leichty (2011). Also Lipiński (1991; 2004: 74).
[537] *CMI* I: 272-273
[538] V. Karageorghis (1983a: 1-2).
[539] É. and O. Masson (1983: 412-413, figs. 7a-c).
[540] See Valério (2014b: 120-121) and Appendix A here.

found in Tomb 49 of Skales and has been dated to the CG I (1050-950). Is it one of the latest Cypro-Minoan inscriptions, or one of the earliest examples of Cypro-Greek? Does it represent a *terminus ante quem* for Cypro-Minoan or a *terminus post quem* for Cypro-Greek? While the spit's short text was categorized as Cypro-Greek by its editors, Olivier argues it is Cypro-Minoan and accordingly has included it in *HoChyMin* as part of CM 1.[541] Since the publication of his editions, the views on the classification of PPAP Mins 001 have multiplied. Egetmeyer accepts it as Cypro-Minoan because of the object's high dating.[542] Steele maintains a cautious position, but seemingly favors Olivier's view.[543] Ferrara thinks the inscription is "safely" Cypro-Greek, "but on linguistic grounds" (i.e. because the text is Greek),[544] but one must keep in mind that script and language are not always synonymous. Recently, Duhoux has made a compelling case that the spit is written in the Cypro-Greek.[545]

Figure 3.3: Drawing of the inscription PPAP Mins 001 (scale ca. 2 : 1).[546]

The inscription is effortlessly read as *o-pe-le-ta-u* /Op^{h}eltāu/, which is the genitive form of the Greek personal name /Op^{h}eltās/.[547] The genitive case is marked by the ending *-āu*, which is the outcome of earlier **-ao*[548] and is shared by the Arcadian dialect spoken in the Peloponnese. Notice that the Cypriot Greek and Arcadian dialects share a number of affinities and therefore have been classed together in a dialectal branch dubbed Arcado-Cypriot.[549] Olivier, who maintains that the inscription is Cypro-Minoan, argues that if it "has any meaning in Greek (…) that is because we are dealing with an identifiable Greek (…) personal name".[550] Yet we are not just dealing with a Greek name, but rather with a name endowed with a Greek case-ending. In this way, the language of PPAP Mins 001 proves to be the same as that of the bulk of inscriptions

[541] É. Masson and O. Masson (1983: 412, fig. 2); *HoChyMin*: 243; Olivier (2013: 16-17).
[542] *DGAC*: 879.
[543] Steele (2013: 43, 91, 243).
[544] *CMI* I: 171, n. 69.
[545] Duhoux (2012).
[546] Drawing by the author according to the photograph given in *HoChyMin*: 243.
[547] The same anthroponym is attested in Mycenaean as *o-pe-ta* /Op^{h}eltās/ (KN B 799; *DocMyc*^{2}: 565) and in Boeotian as Ὀφέλτας. See É. and O. Masson (1983: 414-415) and *DGAC*: 278-279.
[548] Still attested in this form in Mycenaean Greek (É. and O. Masson 1983: 414).
[549] The "Arcado-Cyprian" or Arcado-Cypriot dialect subgrouping was first propounded by Smyth (1887) and, regardless of the debate on its connections to other sub-branches of Greek, it is now consensual (see e.g. Colvin 2010).
[550] Olivier (2013: 18).

written in the Cypro-Greek syllabary later in the 1st millennium BCE. But we need evidence that the *script* is Cypro-Greek, and this cannot come from the language.

Another cornerstone of Olivier's view is the presence of signs he thinks É. and O. Masson failed to see were actually diagnostic of Cypro-Minoan, namely the last two, which he takes to be CM 11/*pe* and CM 12/*u*.[551] Differently, Egetmeyer notes that "from a standard view-point five signs of the inscription present a <CØPØP> sequence (where C = Common Cypro-Greek, P = Paphian Cypro-Greek, Ø = non-characteristic sign form)", i.e. in his opinion all *diagnostic* signs are Cypro-Greek. Particularly, he considers the last sign, *u*, to be identical with the Paphian CGk *u*, which is correct, at least from a formal point of view (cf. Table 3.55).[552] Along similar lines, Duhoux has recently demonstrated that the ductus of syllabogram *pe* in the spit, with "three distinctly zigzagging strokes" (𐄩), has not a single parallel amongst the various attestations of Cypro-Minoan sign 11, but is consistent with CGk *pe*.[553] Without precluding the development CM 11 > CGk *pe*, this indicates that what PPAP Mins 001 features is already CGk *pe* (cf. Table 3.82). This leads Duhoux to favor the interpretation of the inscription as Cypro-Greek.

There are other pieces of evidence that point in that direction. If analyzed in terms of positional frequency, as a V syllabogram the spit's *u* (𐄇) also defies a Cypro-Minoan interpretation. Olivier maintains his classification because he identifies this sign with CM 12 (𐄈, 𐄉, 𐄊, 𐄋, 𐄌). Yet in a syllabary of open syllables V syllabograms tend to be super-frequent in comparison to CV signs and occur in sequence-initial position most of the time, if not always (see 4.2.1). This is the kind of distribution exhibited, for instance, by signs CM 102 and 104, but it is demonstrably *not* the distribution of CM 12 (Table 3.50).

Table 3.50: Positional frequency of CM 12.[554]

Subcorpus	**Initial**	**Medial**	**Final**	**Total**
CM 1	2	6	4	12
CM 2	4	4	0	8
CM 3	–	–	–	–
All	6	10	4	20

Despite the size of the Cypro-Minoan corpus, it is clear that CM 12 is not too frequent and, regarding positional frequency, if anything, it has a slight preference for the medial position, where it is occurs half of the time. These are important objections to assuming the sign was monovocalic and therefore it does not make a good candidate for the

[551] Olivier (2013: 16-17).
[552] Egetmeyer (2013a: 108-109).
[553] Duhoux (2012: 84).
[554] Only the secure attestations are counted.

predecessor of Paphian CGk *u*. In fact, while some variants of CM 12 are indeed similar to Paphian *u* (𐄁), others are identical to LA 11/po[?] (𐄇) and CGk *po* (𐄐) (see 3.4.6, especially Table 3.84).

Facts in favor of a Cypro-Greek interpretation do not end here. PPAP Mins 001 was found in Tomb 49 of *Skales*, which also yielded two additional inscribed spits, equally treated as Cypro-Minoan in *HoChyMin*. The first, PPAP Mins 002, bears the inscription 23 | 23, which is ambiguous enough to allow the Cypro-Greek reading *ti* | *ti*.

Figure 3.4: PPAP Mins 002 (scale ca. 2 : 1).[555]

The second, PPAP Mins 003, consists of two signs as well. One resembles the rare CM 07 in a presumable spike-like variant that is suspiciously elaborate, with several lateral strokes (𐄃). Could this be a pseudo-epigraphical inscription? The other is shaped like a curule chair, and thus could be either CM 97 or CGk *ro*. Hence, no strong point can be made that these spits are written in one script or in the other.

Figure 3.5: PPAP Mins 003.[556]

However, in the dromos of the tomb an inscribed stone block was also found, which is included in *HoChyMin* as PPAP Pblo 001. The reading given by Olivier is 102 | • ,[557] yet the second sign is 𐄉, which has no parallel amongst known Cypro-Minoan sign shapes and has been correctly identified by Egetmeyer with "Common" CGk *nu* (𐄉).[558] Unless this sign is found in an indisputable Cypro-Minoan inscription in the future, PPAP Pblo 001 ought to be Cypro-Greek.

[555] Drawing according to É. Masson and O. Masson (1983: fig. 3).
[556] Drawing according to É. Masson and O. Masson (1983: fig. 4).
[557] *HoChyMin*: 262.
[558] Egetmeyer (2013a: 114-115).

Figure 3.6: PPAP Pblo 001.[559]

In conclusion, the classification of the Ophelta's spit as written in the Cypro-Greek syllabary is supported by the following facts:

- Its language is a form of Greek closely-related to the dialect represented by the Cypro-Greek script;
- Sign *pe* is paleographically consistent with CGk *pe*, not CM 11;
- Sign *u* is paleographically consistent with Paphian CGk *u*; conversely, there are difficulties to comparing it to CM 12 in terms of frequency, positional frequency and paleography;
- PPAP Pblo 001, another inscription from the same tomb, is most likely be written in Cypro-Greek: it contains a sign that is absent from the Cypro-Minoan inventories but is consistent with CGk *nu*;
- The script of spits PPAP Mins 001 and 002, again from Tomb 49, is ambiguous and therefore does not contradict the Cypro-Greek classification.

The last inscription from the necropolis of Palaepaphos-*Skales*, PPAP Pblo 002, also deserves comment. The reading of *HoChyMin* is 109 | 23. The second sign is evidently not diagnostic, as it could equally be CGk *ti*, but it can be argued that neither is the first one. Although É. and O. Masson proposed reading it as CM2-3 51 and Egetmeyer ponders the possibility that CM 109 is a variant of the latter,[560] it cannot be ruled out that it is already an example of CGk *wa* (𐠷). Hence, there is also a chance that PPAP Pblo 002 is already written with the Cypro-Greek syllabary.

Figure 3.7: Drawing of PPAP Pblo 002 (no scale).[561]

[559] Drawing according to É. Masson and O. Masson (1983: fig. 5).
[560] É. Masson and O. Masson (1983: 413); Egetmeyer (2013a: 116).
[561] By the author, based on the photograph of É. Masson and O. Masson (1983: fig. 6).

The implications of the foregoing analysis are twofold: Cypro-Greek can be pushed back to 1050-950 BCE and doubt is cast on the survival of Cypro-Minoan beyond the 11th century BCE.

3.3.2.3 Early Cypro-Greek inscriptions (1050-700 BCE)

Outside Palaepaphos-*Skales*, the earliest Cypro-Greek inscription is potentially *ICS* 172. It consists of four signs made on the ox-head-shaped handle of an iron knife said to have been found in the late 19th century in a copper mine gallery at Limni, east of Marion/*Poli TIS Chrysochous* (western Cyprus). Afterwards it was taken to the Antiquarium of Berlin by Ohnefalsch-Richter. The knife has been dated typologically to ca. 1200-900 BCE, but the inscription may have been made later. The text appears to be *ke-re-o-to* /Kreontos/ 'of Kreon', therefore an ownership mark. Unfortunately, the piece has been missing since World War II[562] and the only surviving register is a schematic drawing from 1891 (Figure 3.8), which is not much to go by, although it suggests the use of the Paphian *o*.[563]

Figure 3.8: Schematic drawing of *ICS* 172 (no scale).[564]

Another early inscription, possibly also later than the object, is *ICS* 254, reportedly found at Maroni, in southern Cyprus. It consists of an ink inscription made around an alabaster vase but, while the medium has been dated typologically to the CG I (1050-950 BCE), the inscribed characters do not look so early.[565] It is worthwhile mentioning that: (1) the text is of very difficult interpretation but it seems to contain a sequence *pa-po-(i-)*, perhaps the place-name Paphos; and (2) employs at the same time a form of syllabogram *u* consistent with the Common variety of Cypro-Greek, and a variant of *e* that seems Paphian (cf. Tables 3.54 and 3.55).

A bit more is known about *ICS* 18c (= *ICS* 174), a chance find which like ICS 172 from the region of Marion-*Poli tis Chrysochous*. It occurs on a pottery jug dated to the CG III (850-700 BCE) and consists of a single painted sequence of signs: *to-ro-to-*

[562] Already in 1983 O. Masson (*ICS*^{2}: 39, 186) reports it as missing. Egetmeyer (*DGAC*: 690) did not manage to locate it in the State Museums of Berlin, and my own attempts have not been more successful (I thank Sylvia Brehme from the Collection of Classical Antiquities of the SMB for informing me on the subject).
[563] See Ohnefalsch-Richter (1899: 329); *ICS*^{2}: 39; *DGAC*: 690-691.
[564] Hoffmann (1891: 88, no. 181).
[565] V. and J. Karageorghis (1956: 353-354, 356-357); see also *ICS*^{2}: 40, 271-272, and pl. XLIII-1-3, and *DGAC*: 722. The details of the provenance of the object are unknown and for its attribution to Maroni we rely only on the testimony of Cesnola.

so-si. The language and interpretation of the text are uncertain. The variant of sign *to* it employs is typical of the early Paphian syllabary (see Table 3.112).[566]

The concentration of early Cypro-Greek inscriptions in western Cyprus, as well as the special place occupied by Palaepaphos-*Skales* in this respect, has led Olivier to hypothesize that the new script was created in the region of Paphos and from there spread to the remainder of the island; at a certain point of this expansion, a second variety of the syllabary developed, probably outside the Paphian area, and this was the one to disseminate to most of the island.[567] Albeit scanty, the epigraphical evidence we have for this phase so far is consistent with such a scenario. There are three Cypro-Greek inscriptions from Kition (*ICS* 257, 258 and 258a) dating from the 8th century BCE, which had been home to a Tyrian settlement probably since the previous century.[568] Plausibly, the diffusion of Cypro-Greek within environments that wrote from right to left (i.e. where the Phoenician alphabet was in use) has been indicated as the reason why the non-Paphian variety of the script, the so-called "Common" syllabary, developed a preference for this writing direction.[569] In favor of this hypothesis is the fact that *ICS* 257, a vase from Kition inscribed with *ta-le-se* (likely the Greek masculine personal name /T^{h}alēs/) and dated to ca. 800-700 BCE, already contains the typical "Common" form of *le*, 𐊉 (on which see the next section).[570] Despite this being a very economical explanation for all facts, it must be welcomed with much caution due to—again—the meager amount of epigraphic evidence. Future epigraphic finds might paint a much more complex picture of the earlier days of Cypro-Greek, if not rewrite the above scenario completely.

3.3.3 The early Cypro-Greek syllabary: what was new?

> *Enfin, parmi les lacunes qui demeurent dans notre documentation, celle qui touche la fin de l'âge du bronze et le début de l'époque chypro-géométrique, … est particulièrement grave, puisqu'elle dissimule les faits pour une période où l'évolution a dû être considérable, tant pour la structure du syllabaire que pour la forme des signes.*
>
> O. Masson[571]

In general terms, when a script is created by adapting a preexisting writing system, the modifications involved that adaptive process are of two basic types: (1) *structural*:

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[566] V. and J. Karageorghis (1956: 353, 357); *ICS*^{2}: 187, fig. 46, Pl. XXIV-4; *DGAC*: 736.
[567] Olivier (2013: 20-21).
[568] Iacovou (2005: 132; 2008: 643-644), citing Yon (1999: 20).
[569] Olivier (2013: 20). It should be also noted that the presumable advance of the Cypro-Greek script in Phoenician circles might have coincided with a deterioration of the influence of Tyre in Cyprus, as suggested by the fact that the Tyrian king requested Assyrian aid against its Cypriot opponents around 709-707 BCE (see Radner 2010: 434).
[570] *ICS*^{2}: fig. 77; *DGAC*: 663-664.
[571] *ICS*^{2}: 41.

available signs may be discarded or recycled (i.e. assigned new phonetic values), or new ones can be added; (2) *formal*: deliberately or not, the graphic shape of signs can be altered. Structural modifications mostly depend on the linguistic features of the donor and recipient languages, while formal changes in a script relate to material and human aspects of its usage. Both types are likely to take place, to a smaller or larger extent, but paleographical evolution is bound to occur continuously throughout the lifetime of any writing system.

Although there is now little doubt that Cypro-Greek was created by adapting Cypro-Minoan, the two are different enough as to hamper comparisons. Just *how* different the two scripts are is difficult to quantify given the size of the Cypro-Minoan corpus and its undeciphered status, which impede us of estimating the number of "isographs" and unshared forms it features when compared to Cypro-Greek. For example, a certain sign of one of the scripts may *in appearance* have no formal correspondent in the other, but it might well have had an unattested paleographical variant that did. All this reduces our ability to investigate the structural changes introduced by the latter script. Still, some observations can be made.

It seems uncontroversial that CGk *tu* (,) is a new Cypro-Greek syllabogram, innovated by adding a sort of diacritic to CGk *to* (, , ). Similarly, CGk *nu* (), which we have seen first appears at Palaepaphos-*Skales* (in PPAP Pblo 002), is peculiar to Cypro-Greek and absent from Cypro-Minoan. Since its left part consists of a curved stroke just like CGk *no* () and CM 17 (), it is possible that, in this case too, a new C*u* sign was invented by modifying the original C*o* syllabogram of the same series.

The rare sign CGk *xe* = /kse/ (), with an atypical CCV structure, is first attested in the 6th century BCE and seems to have been created *secondarily* for writing the Greek cluster *-ks* in word-final position. In initial and interior positions it was unnecessary, because the normal strategy involved using syllabograms of the *k* and *s* series (*k*V-*s*V). However, since final consonants were spelled with a syllabogram containing an "empty" vowel *e* (e.g. *ka-se* for /kas/) (see 5.3 for an overview of the Cypro-Greek strategies for spelling consonant clusters), a Greek word like /kā́ruks/ would have to be spelled with two empty *e* vowels: **ka-ru-ke-se*. The development of a syllabogram *xe* avoided such complexities.[572] CGk *xa* () is attested only once in *e-we-re-xa* /éwerk-sa/ 'I did' (*ICS* 261).[573] Since it would not have served the same function as *-xe*, it is likely that it was created at a later point, perhaps because the two signs in conjunction were useful for spelling the "endings" of Greek sygmatic aorists in verbs with velar stems (sg. *-ksa*, *-ksas*, *-kse*, and pl. *-ksamen*, *-ksate*, *-ksan*).[574] No special signs for /ps/ are attested, but since this cluster is less productive in word-final position than /ks/, this is

[572] *ICS*^{2}: 56, 76-77; *DGAC*: 222-223.
[573] *DGAC*: 22, 232, 486, 610-611.
[574] *DGAC*: 222.

not surprising.[575] Finally, it is possible that the coexistence between the Cypro-Greek syllabary and the (East Ionian) Greek alphabet, which possessed the biconsonantal letters Ξ = /ks/ and Ψ = /ps/, inspired the users of the syllabary to create biconsonantal signs: already around 560-540 BCE we have a biscriptal inscription from Golgoi (*ICS* 260) with the word /kắruks/ spelled alphabetically as KAPVΞ and syllabically as *ka-ru-xe*.[576] The opposite view has also been put forward: Woodard, who argues for a creation of the Greek alphabet in Cyprus, maintains that Cypro-Greek was the one to include original biconsonantal signs and therefore influenced the creation of the digraphs in the alphabet.[577] Whatever might be the case, it seems plausible that the *x*-signs were innovations in Cypro-Greek, not inheritances from Cypro-Minoan.

This practically exhausts the possible glimpses at the structural modifications brought about by the process. A number of other changes seem strictly paleographical.

The most acute difference shown by a syllabogram in the two Cypro-Greek syllabaries concerns syllabogram *le*: for the Common variety this sign's form is 𐠸, but the Paphian signary has (𐠺, 𐠹), which must be the original as it continues CM 24 (𐠊) and is attested in the Opheltas' spit with this same value (see 3.3.2.2 and Table 3.74). It is hard to be certain about why the Common syllabary innovated the shape 𐠸, but since it can hardly be phonetic, I suggest that in early Cypro-Greek the syllabograms *le* (𐠊) and *lu* (𐠋) were so similar paleographically and phonetically that in some non-Paphian circles there arose a need and a wish for a clearer formal distinction. Changing the form of *le* from 𐠊 to 𐠸 would have achieved the desired disambiguation. Thus, despite the extremeness of the paleographical modification, the structure of the syllabary was not affected.

Another significant discrepancy is seen in the Paphian (𐠽) and Common (𐠾) forms of sign *ri*, which, to complicate matters, are only attested from the 6th century BCE onwards. I would like to suggest the possibility that they derive from a subtriangular early shape, such as *𐠾 or *𐠿, even if in *ICS* 367 (from ca. 600 BCE) *ri* is represented by the form 𐠽 (cf. Table 4.13).

Paphian *o* (𐠫) and *so* (𐠬) seseemso be simplifications of Common 𐠪 and 𐠭, so the theter must be the original forms. This is corroborated by the fact that in the Opheltas' spit (1050-950 BCE) CGk *o* is drawn as 𐠪. As a consequence, they represent a paleographical rather than a structural development.

Another syllabogram that shows substantial paleographical variation is *e*. Its paleographical variants include (but are not limited to) 𐠇, 𐠈, 𐠆, 𐠉, 𐠅, 𐠄, 𐠃 and 𐠂. Possibly, they all descend from an earlier form *𐠉, or similar (see 3.4.2, and specially

[575] So Egetmeyer (*DGAC*: 223). In support of this point we can cite a search in the digitized version of the dictionary of Liddell and Scott (1940) of the Perseus Digital Library (available at: http://www.perseus.tufts.edu/hopper/resolveform, consulted on July 25th 2015), which turned 1114 entries with final -ξ, but only 119 with final -ψ. Although the dictionary in question contains both Koine and dialectal forms, this statistic is informative.
[576] *ICS*[2]: 56; *DGAC*: 610.
[577] Woodard (1997: 156 and *passim*).

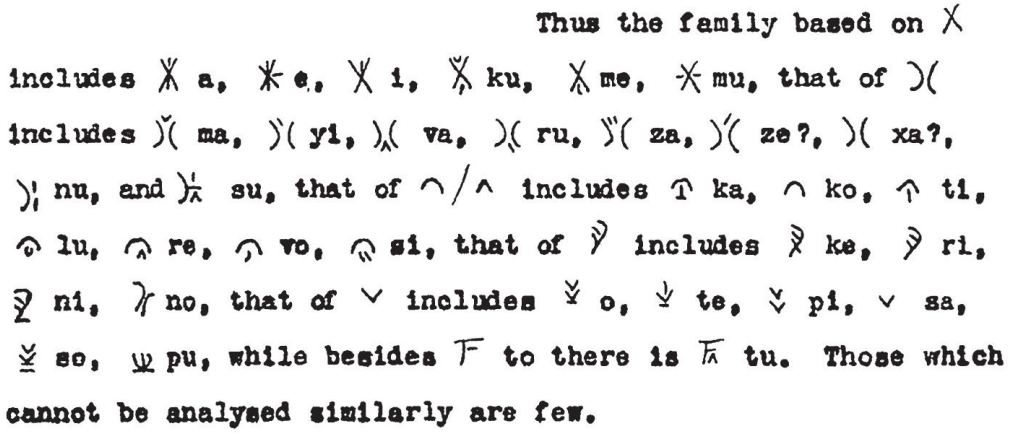
Figure 3.10), with different developments. For example, the variant 𐄇 might be the product of a formal convergence with sign *a* (𐄀), by virtue of both being monovocalic signs.

In the previous chapter, I argued against É. Masson's proposal that Cypro-Minoan was designed mechanically. Here, it is worthwhile mentioning the thoughts of Bennett, who made a similar proposal for Cypro-Greek:

> "A careful consideration of the characters discloses that they are constructed, *whether by an original design or by a thorough adaptation* [emphasis mine], on the principle of making various minor modifications of a few basic forms, (…) quite unlike anything observable in the Minoan scripts."[578]

Bennett's concept is illustrated in Figure 3.9.

Figure 3.9: Bennett's proposal of formal "mechanical" construction of Cypro-Greek signs.[579]



We have seen in 2.2.3.2 that such large-scale mechanical constructions are typical of abugidas but very unlikely in the Aegean-Cypriot (logo-)syllabaries, amongst which Linear B and Cypro-Greek show only unsystematic cases of signs innovated by such strategies. As a consequence, it is more likely that Bennett's possibility of graphic similarity was the result of "adaptation" rather than "original design". For example, it is possible that Common CGk *ri* 𐄛, different from Paphian 𐄚, became the standard form in Common variety of the script under the influence of *ni* (𐄜), because they shared the same vocalic element. The formal convergence of signs with phonetic elements in common may have been used as mnemonics for learning purposes, thus providing a motivation for such phenomena. To illustrate my point, some Cypro-Greek signs may have been taught by remembering diagnostic differences such as "sign *so* (𐄝, 𐄞) is drawn by adding a lower stroke to sign *o* (𐄜, ⊥)" or "sign *e* (𐄇) is drawn by adding a

[578] Bennett (1947: 98-99). apud Palaima (2011: 54).
[579] Bennett (1947: 99), apud Palaima (2011: 55).

horizontal stroke to the right of sign *a* (𐠊), but, if you want to write *i* (𐠋) instead, then you remove the mid-lower stroke".

3.3.4 Patterns of paleographical change: a cursive model for Cypro-Greek?

The domain of paleography presents further possibilities for the understanding of the adaptation of Cypro-Minoan. Without doubt, the epigraphical gap in the archaeological record between ca. 1100 and 700 BCE is not real. The close relation between Cypro-Greek and Cypro-Minoan is bare proof of the continuity of syllabic writing and literacy in Cyprus during this period.[580] Another hint of a continued epigraphic tradition is the reappearance of the Cypro-Minoan SIGN | SIGN type of inscriptions among early Cypro-Greek material, including three of the inscriptions from Palaepaphos-*Skales* (see 0). As a result, some scholars have assumed that the gap is caused, at least in part, by the use of perishable writing media in the Early Iron Age—other factors, namely selectivity of excavated contexts, cannot be excluded.[581]

These fragile media may have included supports on which ink could be used for writing, such as papyrus, animal skins, wooden boards, ostraca,[582] etc. Ink was certainly not unknown for users of both Cypriot scripts. KITI Avas 002 is a late LC IIC Cypro-Minoan inscription painted on the lower part of a globular jug. ENKO Aost 002, a Cypro-Minoan ostracon written in ink, could be as late as the 11th century BCE. At the same time, it is not uncommon to find marks consisting of signs extracted from the Cypro-Minoan repertoire that were painted after firing on Late Bronze Age pottery.[583] Concerning early Cypro-Greek, we have seen that the 8th-century BCE inscription *ICS* 18c consists of one sign-sequence painted on a vase.[584] Furthermore, that the usage of ink occupied a prominent place amongst writing techniques in Early Iron Age Cyprus, is suggested by the fact that, as early as the 6th century BCE, the Cypriot Greek word for 'schoolmaster' was *ti-pe-te-ra-lo-i-po-ne* /dip^{h}t^{h}eráloip^{h}on/, literally 'hide-painter (acc.)'. Likewise, the term for 'inscribed' in the famous 5th century BCE bronze tablet from Idalion (*ICS* 217) is *i-na-la-li-se-me-na* /inalālismenā(n)/ 'painted', despite the fact that this was obviously not the procedure for writing on metal.[585]

Due to the nature of the material, ink writing inevitably takes a cursive a form:[586] cf. e.g. the ductus of the painted variant CM 41 in ENKO Aost 002 (𐠁), which is much

[580] Sherratt (2003: 227); Egetmeyer (2013a: 108).
[581] Already Myres (1914: 301), but see more recently Sherratt (2003: 227) and Steele (2013: 237). I say "at least in part" because other factors, namely selectivity of excavated contexts, cannot be excluded.
[582] Ostraca are in theory more durable because they consist of fragments of baked pottery, but they are also also more likely to be discarded because of their usually ephemeral purposes.
[583] See e.g. Hirschfeld (2002: 60 and *passim*).
[584] *ICS*^{2}: 187, fig. 46.
[585] See V. and J. Karageorghis (1956: 355), Chantraine (1991: 287-288), and *DGAC*: 170, 494, and 497. Syllabic *ti-pe-te-ra-lo-i-po-ne* is at Marion (*ICS* 143), but cf. also Hesychius' gloss διφθεράλοιφος· γραμματοδιδάσκαλος παρὰ Κυπρίοις.
[586] *Cursive*: a form of writing in which characters are formed and joined in a rapid flowing style. Cursive signs tend to show some formal and dimensional variation, prominent stroke curvature, and more

simplified when compared with instances of the same sign written in other techniques (see Table 2.34). If ink became an important means of conveying syllabic writing in the period from ca. 1100 through 700, then it could explain the apparent paleographical deviation of many Cypro-Greek signs. A case in point is CM 75 (). Scholars have compared it to CGk *ra* (,),[587] but while CM 75 is consistently a four-stroke, square-like shape, CGk *ra* presents a subcircular or subtriangular form, usually with three of four strokes, bottomed on a horizontal line. A direct relation of these two signs is only possible if we assume an intermediary paleographic stage, in late Cypro-Minoan or early Cypro-Greek, in which the lower stroke of the subquadrangual shape was removed from the other three strokes and became a sort of base. This hypothetical stage is exactly what we find a painted Cypro-Minoan potmark from Erimi-*Kafkalla* (Table 3.51).

Table 3.51: Comparison between CM 75, a painted potmark probably representing CM 75 and CGk *ra*.[588]

CM 75	**CM potmark T.127/17 Erimi-*Kafkalla* (1300-1190 BCE)**	**Early CGk *ra***
		

Nevertheless, ink is not the only technique that prompts cursivization. Writing on wet clay, especially if the tip of the stylus is relatively thin and slides with easiness, may also produce cursive shapes. There is a formal modification common to the *ductus* of several Cypro-Greek signs which Egetmeyer characteristically describes as H > X,[589] because it consists in simplifying an H-like structure that requires either three or five strokes to a cross-like shape that needs only two. The epitome of this shift is CM 102 () > CGk *a* (), but the prelude is seen in variants of Cypro-Minoan signs written on wet clay, particularly on the balls from Enkomi (ca. 1225-1100 BCE), and it is particularly evident in signs like CM 97 (>)[590] and 107 (>). Some of these "X" shapes also occur in hard media in this later phase of Cypro-Minoan, e.g. CM 102 in the miniature ingots (the "Mlin" inscriptions). In the analytical section of this chapter we will see that other more cursive forms that appear exclusively (or almost) in the clay balls may be the antecedents of some typical Cypro-Greek signs.

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compact spacing; paleographical development tends to occur more rapidly. Cursive scripts can be employed on on harder media, such as stone and metal (see e.g. Rollston 2006: 50, n. 8).

[587] O. Masson (1956: 249); Saporetti (1976: 92); Nahm (1981: Abb. 2).

[588] For the potmark, see Hirschfeld (2012b: 291, 298, fig. 5). It was painted on the base of a Late Helladic IIIB stirrup jar which supplies the (typological) chronology. The drawing given here is based on the photograph in the latter work. I am thankful to Joanna Smith and Nicolle Hirschfeld for kindly providing all the relevant information and bibliography. For early CGk *ra*, see Table 3.77.

[589] Egetmeyer (2013a: 113-114, 119-120).

[590] Although this simplified version of CM 97 occurs already in the LC I inscription of ENKO Apes 001 (see 3.2.2.2).

In conclusion, a more cursive Cypro-Minoan model for Cypro-Greek[591] would explain why some Cypro-Greek signs, even when inscribed on harder media, seem to take after less frequent, cursive-looking forms of Cypro-Minoan signs.

3.4 ANALYSIS

3.4.1 Methodological observations

The comparisons between Cypro-Minoan and Linear A presented below follow the same methodology employed in section 3.2.2.2. Preference was given to the earliest examples of each Cypro-Minoan sign, which in general means using inscriptions dating to the LC II or 1425-1190 BCE. The comparative tables from 3.2.2.2, where ENKO Atab 001 was analyzed and compared to Linear A and the bulk of Cypro-Minoan, need to be taken into account event though they will not be repeated here.

For the comparison between our script and Cypro-Greek, Cypro-Minoan inscriptions from the LC III (1190-1050 BCE) are used as much as possible; whenever a Cypro-Minoan sign is not attested in this period, earlier examples are required perforce.[592] The Cypro-Greek comparanda derive from inscriptions dating to the Cypro-Geometric (1050-750 BCE) and roughly the first half of the Cypro-Archaic (750-600 BCE). The necessity to resort to material as late as the 6th or 5th centuries BCE is the unavoidable consequence of the epigraphic paucity of the time-span of 1100-700 BCE. Whenever a Cypro-Greek sign is poorly attested, or not attested at all, even as late as 600 BCE, later inscriptions have to be used. The signs derived from inscriptions from Palaepaphos-*Skales*, as well as from other documents in *HoChyMin* that might be Cypro-Greek, are included in the comparisons as "intermediate" forms.

3.4.2 The vocalic series

There is broad agreement that CM 102 is related both to LA 08/*a* (𐘈) and CGk *a* (𐊀), and that therefore its phonetic value should be *a* as well (see 3.1). For the comparison between LA 08/*a* and CM 102, see Table 3.12 in 3.2.2.2; for the relation between CM 102 and CGk *a*, see Table 3.52 here.

[591] At the end of the Late Bronze Age, "institutionalized" writing and its transmission at centers like Enkomi may have been predominantly done with ink or on wet clay, while at the same time "monumental" writing on stone may have been uncommon and shorter inscriptions on metal and pottery secondary (i.e. dependent on the standards established by "clay scribes").

[592] Pending the publication of a new Cypro-Greek corpus, *DGAC* contains what to my best knowledge is the most up-to-date and detailed list of Cypro-Greek inscriptions.

Table 3.52: Comparison between CM 102 and CGk *a*.

CM 102			**CGk *a***	
		→		
ENKO Mlin 003	CYPR Mvas 002		*ICS* 157	*Kouklia* 63
				
ENKO Aost 002.02	KITI Iins 002.*a*		*ICS* 367	*Rantidi* 37

It is also consensual that CM 104 is related both to LA 28/*i* (𐘋, 𐘏) and CGk *i* (𐊊, 𐊋, 𐊌), and that therefore its phonetic value should be *i* as well. For the comparison between LA 28/*i* and CM 104, see Table 3.32 in 3.2.2.2; for the relation between CM 102 and CGk *a*, see Table 3.53 here.

Table 3.53: Comparison between CM 104 and CGk *i*.

CM 104			**CGk *i***	
		→		
ENKO Abou 080	MYRT Mvas 001		*ICS* 254	Casabonne and Egetmeyer (2002)
				
KITI Iins 001.01	ENKO Aost 002.01		*ICS* 369a	*ICS* 178

CM 38 is identical to LA 38/*e*[?] (𐘦) (see Table 3.30), but is it is not a straightforward match to CGk *e* (𐊏, 𐊐, 𐊑) (cf. Table 3.54). We have seen in 3.3.3 that the abundant paleographical variants of CGk *e* probably evolved from an early Cypro-Greek form *𐊑, or similar. The latter may have been the outcome of a considerable, but not unimaginable, evolution of CM 38 (𐠘), as illustrated in Figure 3.10. For the comparison between the two signs, see Table 3.54.

Figure 3.10: Hypothetical paleographical evolution from late CM 38 to early CGk *e*.[593]

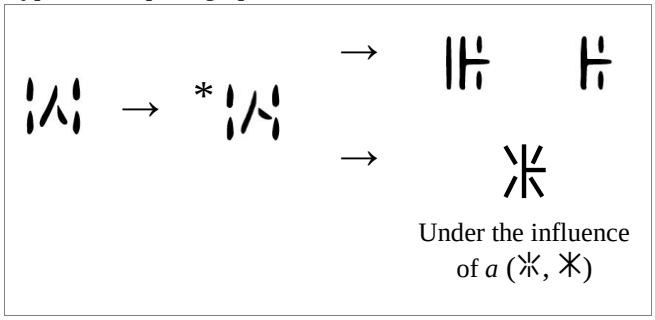


Table 3.54: Comparison between CM 38 and CGk *e*.

CM 38			**CGk *e***		
			Paphian		**Common**
					
ENKO Avas 009	MYRT Mvas 001	→	*ICS* 254[594]	*ICS* 178	*ICS* 369a[595]
					
MYRT Mvas 002	KITI Avas 016		*ICS* 176	*Rantidi* 1	*ICS* 346[596]

At this point it is useful to convey a methodological warning. As the Linear A sign values are approximations based on Linear B and its *e* and *o* syllabograms are rarer and less systematic than signs of the *a*, *i* and *u* series, we cannot consider certain the existence of a five-vowel grid in the Minoan script. It must be again stressed that the putative values ensuing from this chapter's comparisons are no more than approximations. In this respect, we will see that the theoretical *e*, *o* and *u* signs of Cypro-Minoan are particularly difficult to assess and cannot be framed in a neat structure. Thus, while it is justified to assign the value *e*[??] to CM 38 as a working hypothesis, the existence of a full *e* column in the syllabary or an independent /e/ phoneme in the language of Cypro-Minoan should not be taken for granted. The same applies to the following two cases of V signs.

CM 19/79 is comparable with some caution to LA 10/*u* (,), but it is not obvious whether it is the predecessor of CGk *u* (, ~) (Table 3.55).[597] The latter

[593] For the proposal of a "missing link" similar to this *, see already Faucounou (1977: 237, fig. 1).
[594] According to the illustration in Cesnola (1903: CXLI, 7a, b). apud V. and J. Karageorghis (1956: 353, fig. III.I).
[595] According to *ICS*[2]: fig. 154.
[596] Drawing by the author based on the photograph given in V. and J. Karageorghis (1956: fig. 6).
[597] For the comparison betweem CM 19 and CGk u () see Saporetti (1976: 90, fn. 6) and Nahm (1981: 55-56, Abb. 3). Nahm (1981: 55-56, Abb. 3) reads CM 19 as *u*, but ponders *u* or *o* for CM 79 (Nahm 1984: 166-167, Abb. 2).

would require us to suppose a considerable alteration of the Cypro-Minoan shape. However, as in the case of CM 38 = *e*[??], these comparisons are enough to suggest *u*[??] as hypothetic phonetic value of CM 19/79.

Table 3.55: Comparison between LA 10/*u*, CM 19/79, and CGk *u*.

LA 10/*u*			**CM 19/79**		**PPAP Mins 001**	**CGk *u***	
						Paphian	**Common**
 PH 7a.2	 AP Za 1	→	 ENKO Arou 001.20	 ENKO Abou 001		 *ICS* 178	 ICS 327.11
 KH 7b.2	 PK Za 12.c		 ENKO Atab 003.B.15	 KITI Avas 019		 *Kouklia* 16	 *ICS* 319

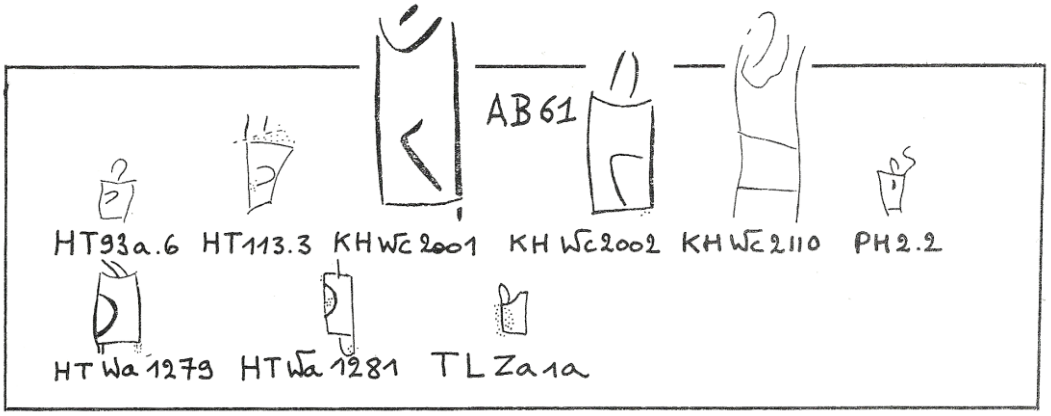
For a theoretical group of five V signs to be achieved, we would now only require a sign with the hypothetical value *o*. However, this is the most problematic slot. CM1 64 is identical to CGk *o* () (see Table 3.56), but not at all to LA 61/*o*[??] () (see Figure 3.11).

Table 3.56: Comparison between CM 64 and Common CGk *o*.

CM 64	**ATHI Adis 001**	**PPAP Mins 001**	**CGk *o***	
			Common	**Paphian**
 ENKO Abou 063			 *ICS* 212a[598]	 *Rantidi* 1
 ENKO Mvas 001			 *ICS* 346	 *ICS* 189

[598] Drawing from *ICS*[2]: 419.

Figure 3.11: Main paleographical variants of LA 61/*o*[??].[599]



The default assumption is that CM 64 is a Cypriot innovation. The uncertainties surrounding it are aggravated because we ignore whether the sign is part of all Cypro-Minoan subcorpora: as we have seen in 2.3.13, it is unclear whether CM 62 (exclusive to CM 2) is a distinct grapheme as posited by É. Masson and Olivier, or an allograph of CM 64 (which appears on the clay balls, but not ENKO Arou 001 nor RASH Atab 004). At this stage, I will assign the experimental value *o*[??] only to CM 64.

The possibility that Cypro-Minoan inherited LA *a*, *e*, *i* and *u*, but not *o*, raises questions concerning the kind of restructuring of the Linear A template that took place in the creation of Cypro-Minoan, yet a proper assessment will only be possible after the complete analysis of the CV series.

3.4.3 The j series

By all indications the ancient Cypriot dialect had lost the palatal glide /j/ of Proto-Greek by the time the Cypro-Greek syllabary was developed. [600] Since in the latter the *j* series was fundamentally used to transcribe the transition from /i/ to another vowel and /j/ was probably not a phoneme of the dialect suggests strongly that this syllabic series was most probably not essential. Thus, the existence of a Cypro-Greek *j* series seems justified only if it was a leftover from its model.

Following this line of reasoning, if Cypro-Minoan included a *j* series, it is likely to have had roots in the *j* series of Linear A. Unfortunately the evidence from script comparison indicates only two *j* signs that may have continued from Linear A through Cypro-Greek. In section 3.2.2.2, we have seen that, despite many uncertainties, LA 57/*ja* is the possible predecessor of CM 69. Could this be the source of CGk *ja*? From the point of view of "diachronic paleography", sign CM 69 could indeed be the "midway" between LA *ja* and CGk *ja* (see Table 3.57), if we assume a gradual but

[599] According to *GORILA* V: xxxviii.
[600] Egetmeyer (2013a: 127).

dramatic cursivization of its shape that for the moment is hypothetical. So is the value *ja*[??] considered here for CM 69 (= CM1 72?).

Table 3.57: Comparison between LA 57/*ja*, CM 69 and Common CGk *ja*.

LA 57/*ja*		**CM 69**		**Common CGk *ja***
 HT 7a.2	→	 ENKO Abou 032  CYPR Mvas 003	→	 *ICS* 318.A.III.1  *Rantidi* 42

The case of CM 88/89/90 is remarkable because of its comparanda suggest a vocalic shift: its earliest instances are comparable to LA 65/*ju*[?], but its later examples resemble CGk *jo* (Table 3.58).[601] Once more, the Cypro-Greek sign suggests a cursivization of the original Cypro-Minoan form. The match is convincing in terms of both paleography and phonology, hence I propose for CM 88/89/90 the tentative value *jo*/*u*[??].

We have seen that LA *j* most probably represents a true palatal approximant /j/ (3.2.3.2.6). Whether in Cypro-Minoan *j* also transcribes a consonant, or simply the transition between /i/ and another vowel, or both, depends on the usage of the syllabograms. If it could be demonstrated that CM *j*[??] signs were used in V-*j*V strings where the preceding vowel is not /i/, as well as sequence-initially, that would argue strongly in favor of a consonantal value. The phonological value of the series might also depend on whether multiple languages were written with Cypro-Minoan. The case of Cypro-Greek well illustrates this possibility: with the main target language of the script, Greek, *j* signs were used only for *i-j*V transitions, but when used secondarily for another language, Eteocypriot, the same series almost certainly denoted an actual consonant, perhaps the glide /j/ or a palatal obstruent.

[601] To the best of my knowledge, this development has not been proposed before. Independently, Soldani (2013: 105-106) hypothesizes a graphic connection between LA 65/*ju*[?] and CM 88/89/90, but on the whole his proposal has very different methodological contours. On one hand, it is made in the framework of a doctoral thesis that proposes formal relationships between signs of *all Aegean and Cypriot scripts* which in turn are used as the *main* basis for reading all of these writing systems. On the other hand, Soldani proposes no Cypro-Greek descendant of CM 88/89/90.

Table 3.58: Comparison between LA 65/*ju*[?] and CM 88/89/90, and between CM 88/89/90 and GGk *jo*.

LA 65/*ju*[?]			**CM 88/89/90**	
				
TY 2.4	KN Za 19.1	→	ENKO Arou 001.02	ENKO Abou 063
				
HT 20.4	ZA 6b.1		ENKO Atab 002.A.I.32	ENKO Atab 003.B.16
CM 88/89/90			**CGk *jo***	
				
ENKO Avas 005	ENKO Abou 068	→	*ICS* 318.A.I.9[602]	*ICS* 327.A.7
				
CYPR Mvas 003	PPAP Mvas 001		*ICS* 327.A.10	*ICS* 153

3.4.4 The k, z *and* z_2 *series*

This section deals with evidence for reconstructing three consonantal series of the Cypro-Minoan syllabary, beginning with the *k* series. Before doing so, some observations must be made regarding the syllabograms potentially used for stops in Cypro-Minoan. We have seen above (3.2.3.2.1) that it is a universal tendency of the languages of the world to possess at least three stops. Linear B and Cypro-Greek possess three series of stops conventionally transliterated *k*, *t*, *p*, and they also have antecedents in Linear A. The status of LA *k*, *t*, and *p* as series representing stops /k/, /t/, and /p/ is not unquestionable, nor is it impossible that Cypro-Minoan signs extracted from a stop series in Linear A *and* used as model for stops in Cypro-Greek actually represented a non-plosive sound. Nevertheless, the above facts support the notion that Cypro-Minoan also possessed three series *k*, *t*, and *p*, corresponding to plosive sounds in its underlying language(s). More evidence for this will be provided in subsequent sections.

We begin the survey of evidence for a CM *k*[??] series with two solid correspondences. On one hand, it has long been recognized that there is a continuity in

[602] This sign shape, which occurs twice in the inscription (lines A.I.7 and A.I.9), has been taken to be *mi* () and *te* (), respectively (see most recently *DGAC*: 792). However, the photograph and drawing in Meister (1909) show that this is demonstrably not the case.

LA *ka* > CM 25 > CGk *ka* (see Tables 3.2, 3.19, and 3.59). On the other hand, the match LA *ki* > CM 70 > CGk *ki* (Table 3.60), first proposed by Saporetti, is accepted by a number of scholars.[603] The paleographical evidence provided here substantiates both cases.

Table 3.59: Comparison between CM 25 and CGk *ka*.

CM 25			**CGk *ka***	
		→		
ENKO Abou 031	ENKO Abou 054		*ICS* 318.A.III.1	*ICS* 327.A.3
				
MYRT Avas 002[604]	ENKO Avas 014		*Rantidi* 30	*Rantidi* 42

Table 3.60: Comparison between LA 67/*ki*[?] and CM 70, and between CM 70 and CGk *ki*.

LA 67/*ki*[?]			**CM 70**	
		→		
PH 7a.2	PK Za 11.a		CYPR? Psce 001	CYPR? Psce 006
				
ZA 21b.2	HT 120.4		ENKO Arou 001.03	RASH Atab 004.b.19
CM 70			**CGk *ki***	
		→		
KALA Arou 001.11	ENKO Abou 029		*ICS* 327.B.14	*ICS* 219
				
ENKO Abou 053	ENKO Abou 073		*ICS* 217.A.9	*ICS* 210.1

[603] Saporetti (1976: 93, 107, fig. 12), followed by Faucounau (1977: 237, fig. 1), Nahm (1981: 53, Abb. 1) and Olivier (2013: 8).
[604] Drawing according to É. Masson (1972a: 130, fig. 4), apud *HoChyMin*: 226.

Other syllabograms that a priori might belong in the same series pose many more difficulties. CGk *ko* is matched by CM 21/15,[605] but neither LA 70/*ko*[??] (𐙐) nor 81/*ku*[??] (𐙒, 𐙔) make suitable formal comparanda. Albeit problematic, the most economical hypothesis is that CM 21/15 is the product of a substantial graphic simplification of LA 70/*ko*[??].[606]

Table 3.61: Comparison between CM 21/15 and CGk *ko*.

CM 21/15			**CGk *ko***	
				
CYPR Mvas 004	ENKO Avas 014	→	*ICS* 258	*ICS* 367
				
ENKO Abou 043	ENKO Abou 048		*ICS* 143	*ICS* 144

CM 110 (𐙘) is the model of CGk ku (𐙛), but seems to be borrowed from LA 44/*ke*[??] (𐙇) (Table 3.62).[607] The upper central part of LA 44/*ke*[??] normally consists of one small vertical stroke (𐙇), and only once it is attested with two (HT 87.1), but the fact that LB 44/*ke* is consistently drawn with two upper vertical strokes, resembling an inverted V-shape (𐙇), strongly suggests that a similar form was more frequent in Linear A. This is enough to infer that CM 110 belonged in a CM *k*[??] series, so for the moment it will be assigned the hypothetical value of *ke*/*u*[??].[608]

[605] Cf. already Sittig (1956: 41).
[606] As pondered by Faucounau (1977: 237, fig. 1) and Nahm (1981: 54, Abb. 2)
[607] There are vertical forms of LA 81/*ku*[??] (𐙔) that slightly resemble CM 110, but these occur only in nodules from Hagia Triada (cf. HT Wa 1547 and 1604 in *GORILA* II).
[608] Nahm (1981: 56, Abb. 3; 1984: 167, Abb. 2) takes CM 110 to represent *ku*, but relates it to 81/*ku*[??] (𐙔). Facchetti *et al*. (2013 : 65) read tentatively *ke*.

Table 3.62: Comparison between LA 44/*ke*[??] and CM 110, and between CM 110 and CGk *ku*.

LA 44/*ke*[??]		**CM 110**				**CGk *ku***	
							
PR Za 1a	→	KOUR Psce 001	ENKO Arou 001.08	ENKO Abou 037	→	*ICS* 158	*Rantidi* 25
							
HT 87.1		CYPR? Psce 002	ENKO Abou 044	ENKO Abou 062		*ICS* 357	*ICS* 327.11

The rare CM 112 () is the obvious predecessor of CGk *ke* (),[609] but in Linear A we only find an *approximate* counterpart in sign LA 74/*ze*[??] () (Table 3.63).

Table 3.63: Comparison between LA 74/*ze*[??], CM 112 and and CGk *ke*.

LA 74/*ze*[??]			**CM 112**			**CGk *ke***	
							
HT Wa 1292	HT Wa 1293	→	ENKO Abou 043	ENKO Abou 066	→	*ICS* 254	*ICS* 157
							
HT Wa 1294	HT Wa 1319		ENKO Abou 042	ENKO Mvas 002		*ICS* 156	*ICS* 164

Table 3.64: Overview of the comparative evidence for a CM *k*[??] series.

LA		**CM**		**CGk**	
Sign	**Value**	**No.**	**Sign**	**Sign**	**Value**
	ka	25			*ka*
	ke	110			*ku*
	ki	70			*ki*
	ko	21/15			*ko*
	ku	—	—	—	—
	ze	112			*ke*

[609] Egetmeyer (2013a: 115).

This difficult comparison, which to the best of my knowledge has never been proposed, obviously raises questions: what sound exactly did LA *z* represent, and how could it have motivated the development LA *ze* > CM 112 > CGk *ke*?

At first sight, the transliterations of the Linear A/B (*ze*) and Cypro-Greek signs (*ke*) imply different consonants and complicate the connection. However, it is probably not a coincidence that this strange correspondence occurs with syllabograms of *e* vocalism. As we have seen in 3.2.3.2.2, [ʦ, ʣ] are the most probable pronunciations of LB *z*, whereas the corresponding Linear A series, $z^{??}$, probably represented some sort of palatal stop, palatal affricate or sibilant affricate along the continuum /c, ɟ → ʦ, ʣ/. Importantly, there are no indications of a major restructuring of the LA *k* and *z* series in their borrowing into Linear B. That the Cypriot discrepancy involves C*e* syllables implies a phonological cause similar to what caused the LB *ke* ~ *ze* spelling variations. Again, as seen in 3.2.3.2.2, most probably the sound of LB *ke* represented a sound allophonically close to that of *ze* (in its voiceless version [ʦ]) by virtue of a fronting of /k/ before /e/. In the opposite direction, if the development LA 74/$ze^{??}$ > CM 112 > CGk *ke* is real, it must reflect the borrowing of a syllabogram *ze* = /ce, ɟe → ʦe, ʣe/ to represent a syllable /ke/ where the velar stop /k/ was also fronted. Since Cypro-Minoan is undeciphered we would not be able to determine whether it was the responsible for such an adaptation. However, we can investigate whether the Cypriot Greek velar stops /k, g, k^h/ were fronted before /e/ at the time the Cypro-Greek syllabary was device. If so, then $ze^{??}$ > *ke* might constitute an innovation of Cypro-Greek. In other words LA 74/$ze^{??}$ would have been borrowed as CM 112/$ze^{??}$, not as a member of the $k^{??}$ series.

Egetmeyer underlines the lack of evidence for a fronted pronunciation of the Cypriot velars,[610] but this is hardly surprising given the characteristics of the Cypro-Greek script. In other words, the transliteration of the *k* series need not reflect a stable pronunciation of the voiceless velar stop as [k] in all environments. All dialects of Modern Greek have been shown to feature fronted velars to a greater or lesser degree and Davis, for example, uses this fact to support velar-fronting in Mycenaean Greek.[611] This sort of extrapolation assumes that a language from around 1450-1200 behaved in a manner identical to related dialects spoken approximately 3,000 years later. It seems less risky (but still so in a certain measure), to look for evidence of velar-fronting in 1st millennium BCE Greek dialects that were coeval with Cypriot Greek. The task is not easy, as the Greek alphabet did not possess clear-cut means to represent the different phonological stages of fronting. Evidence from Lycian-Greek transcriptions does suggest that a palatal stop [c] could potentially have been written with alternating κ and σ,[612] whereas more fronted stages from the palatal affricate [cç] onwards might prompt other strategies, such as ζ, τζ, σ(σ), etc. Conversely, allophonically [k^j] would probably

[610] *DGAC*: 190.
[611] B. Davis (2014: 225-226, 230), citing Newton (1972). See also Manolessou and Pantelidis (2013).
[612] For the use of Greek κ and σ in rendering Lycian *k* = [c] in personal names (e.g. Lycian *tikeukẽprẽ* = Τισευσεμβραν), see Kloekhorst (2008a: 125).

have been spelled with the letter κ alone, thus being unnoticeable. Nevertheless, certain alphabetical spellings suggest that in Pamphylian (after the 5th century BCE), Attic (from 300 BCE onwards), and the Ptolemaic papyri from Egypt (in the 2nd century BCE), /g/ was fricativized to [ɣ], and then fronted to [j] in intervocalic position after a front vowel.[613] It has been observed in the Modern Greek dialects that, generally, if [g, x, ɣ] have undergone fronting, then [k] will have undergone fronting as well.[614] As a consequence, if several Greek dialects of the second half of the 1st millennium possessed a fronted /g/, then most probably /k/ had already undergone some fronting as well. Along with the prevalence of velar-fronting across languages, this makes scholars prone to accept some degree of allophonic palatalization of [k] before front vowels and the palatal glide [j] in ancient Greek.[615] In conclusion: if of the three phonemic velar stops of Cypriot Greek that were represented by CGk *k* at least /k/ was fronted before /e/ at the time the syllabary was devised, then CGk *ke* may have been modeled on a hypothetical CM 112/*ze*??.

It is true that we cannot exclude the alternative scenario, in which the inventers of Cypro-Minoan adapted LA 74/*ze*?? already to CM 112/*ke*??. However, the solution we have pondered first allows for a more comprehensive account. The development LA 44/*ke*?? > CM 110 > CGk *ku* posited above presents a similar dilemma: if it is real, it is difficult to know whether the shift in the vocalic value (C*e* > C*u*) occurred in Cypro-Minoan or Cypro-Greek. However, if we assume that the two modifications, *ze* > *ke* and *ke* > *ku*, were introduced in Cypro-Minoan, most of the problems they pose are removed. I propose the following set of hypotheses:

(1) LA 74/*ze*?? > CM 112/ *ze*??, leaving syllable *ke*?? was free to be represented by LA 44/*ke*?? > CM 110.

(2) Cypro-Minoan may have lacked *ku*?? syllabogram. There is some support for this: some Cypro-Greek C*u* signs (*nu, ru* and *tu*) appear to be innovations (see 3.3.3), implying their absence from the Cypro-Minoan model.

(3) CM 112/*ze*?? was adapted as CGk *ke* because at least Greek /k/ was palatalized before /e/. The creators of Cypro-Greek now required a sign for *ku*. CM 110/ke?? was available, but it would probably be suitable for CGk *ku* if CM *e* represented a vowel such [ɪ], [ɘ] or [ə] (with a more back or higher articulation like /u/). Thus: CM *ke* = [kɪ], [kɘ] or [kə] ≈ Greek [ku] > CGk *ku*.

So far so good, but the foregoing scenario raises yet another question: if Cypriot Greek velars were fronted before front vowels, why is it that CGk *ki* is modeled on LA

[613] Gignac (1976: 71, fn. 1), with references. For Pamphylian see Panayotou (2007: 429).
[614] Newton (1972: 127-128) apud Manolessou and Pantelidis (2013: 277).
[615] See e.g. Lejeune (1972: 33) and Horrocks (2010: 170, 172).

ki[?] > CM 70 = *ki*[??] and not a redeployed LA > CM *zi* sign? As velar-fronting is so pervasive cross-linguistically, one would also expect Cypro-Minoan /ki/ to have had a relatively fronted pronunciation, as occurs e.g. with modern speakers of English and Catalan.[616] There is also a solution for this problem. Let us assume that the language(s) of Cypro-Minoan experienced some degree of velar-fronting as well, and CM 70 = *ki*[??] /Ki/ was fronted to [K^{j}i ↔ Ci], regardless of the exact velar represented. In this way it would still be suitable source for CGk *ki*. Conversely, if CM 110/*ke*[??] contained a *e* that somewhat backed as hypothesized above, then it may not have fronted /k/ at all. In this case, it would make sense for the inventers of Cypro-Greek to prefer CM 112/ *ze*[??] as a model for *ke*, especially if /ke/ was pronounced like [k^{j}e] or [ce]. The full scenario is summarized in Table 3.65.

Table 3.65: Hypothetical developments from Linear A to Cypro-Minoan, and from Cypro-Minoan to Cypro-Greek, involving signs CM 110, 70 and 112.

Linear A			**Cypro-Minoan**			**Cypro-Greek**		
Sign	**Value**	**Realization**	**Sign**	**Value**	**Realization**	**Sign**	**Value**	**Realization**
	*ke*[?]	/ke/		*ke*[??]	/Kɪ, Kɘ, Kə/?		*ku*	[ku, k^{h}u, gu]
	*ki*[?]	/ki/		*ki*[??]	/K^{j}i ↔ Ci/?		*ki*	[k^{j}i, g^{j}i, k^{hj}i ↔ ci, ɟi, c^{h}i]
	*ku*	/ku/	—	—	—	—	—	—
	*ze*[??]	/ce, ɟe ↔ ʦe, ʣe/		*ze*[??]	/ce, ɟe ↔ ʦe, ʣe/?		*ke*	[k^{j}e, g^{j}e, k^{hj}e ↔ ce, ɟe, c^{h}e]

The immediate implication of this arrangement would be the potential existence of an inherited *z* series in Cypro-Minoan, borrowed to represent one of the sounds in the continuum /c/ɟ ↔ ʦ/ʣ/ or a phoneme close to them. Typogically this would be unproblematic, as these sounds are quite frequent in human languages: 25.3% of languages in *UPSID* have at least one *palatal obstruent*, whereas 64.3% possess at least one *sibilant affricate*.[617]

It is somewhat surprising that besides LA *ze* > CM 112 there is little trace of a systematic borrowing of the LA *z* series into Cypro-Minoan. It is true that our knowledge of the Minoan series is hardly complete: a potential LA *zi* syllabogram has not yet been recognized[618] and it is quite possible that LA *zo* never existed.[619]

[616] Recasens and Espinosa (2009: 190), with references.
[617] Personal count.
[618] The task of discovering LA *zi* is complicated by the fact that deciphering the Minoan syllabary depends largely on the readings Linear B signs. To this day, no syllabogram *zi* has been identified in the Mycenaean script. Since the LB *z* series represents the historical outcome of */kj/ and */j, dj, gj/, the syllables /ʦi/ and /ʣi/ were not productive in the inherited Greek vocabulary, although they probably occurred in Greek adaptations of foreign onomastics and loanwords with identical syllables. It is therefore possible that *zi* is one of the infrequent Linear B signs that remain untransliterated.
[619] Linear A has a formal counterpart to LB 20/*zo*, but it is attested only once, as a logogram (KH 57.2).

Nevertheless, no counterpart to the well-attested LA 17/*za*[?] is seen so far in Cypro-Minoan, whereas a derivative of LA 79/*zu*[??] occurs only in ENKO Atab 001, but does not reoccur in all the later Cypro-Minoan documentation. With such a limited epigraphic corpus, it is quite possible that this Cypro-Minoan *z* series of Cretan origin is simply not better attested by accidents of preservation. In any event, its absence from the long Enkomi tablets (where 112 remains unseen) suggests that this series might have been infrequent, perhaps even marginal.

An even stranger circumstance is that Cypro-Greek presents a defective *z* series with potential counterparts in Cypro-Minoan, but no precedent at all in Linear A. Thus CGk *zo* (𐠶, 𐠷) derives from CM 59 (𐄫) (Table 3.66),[620] whereas CM 107 (𐄬, 𐄭) is possibly the model for CGk 𐠺,[621] which scholars transliterate hesitantly as *ga* or *za* (as we will see below).[622] It is important to note that CM 107 is also comparable to CGk *ma* (𐠹),[623] but CGk *g*/*za* (𐠺) is a more fitting formal match. In CGk *ma* the two upper central strokes are sub-vertical or open like a V, while the "less open" upper part of CGk *za* is more consistent with the late variants of CM 107 (Table 3.67). For the discussion on the Cypro-Minoan antecedents of CGk *ma*, see 3.4.6.

Table 3.66: Comparison between CM 59 and CGk *zo*.

CM 59			**CGk *zo***	
 ENKO Atab 003.A.13	 ENKO Abou 062	→	 *ICS* 354	 *Kouklia* 3
 ENKO Atab 004.B.14	 KITI Iins 001.02		 *ICS* 318.A.I.5	 *ICS* 183g

[620] As first seen by Nahm (1984: 165).
[621] Already Nahm (1984: 179).
[622] To the best of my knowledge this comparison as not been suggested so far.
[623] Saporetti (1976: 95). See also Egetmeyer (2013a: 111).

Table 3.67: Comparison between CM 107, and CGk *za* and *ma*.

CM 107			**CGk *za***		**CGk *ma***	
						
ENKO Abou 012	KITI Avas 014	→	*ICS* 254	ICS 327.A.6	Casabonne and Egetmeyer (2002)	*ICS* 369a
						
KITI Iins 001.01	KITI Avas 018		*ICS* 217.A.10	*ICS* 154.1	*ICS* 346	*Rantidi* 34

Could this mean that Cypro-Minoan had two *z* series, a rare one inherited from Linear A but not continued in Cypro-Greek, and a second one, wholly innovative and preserved in the derivative syllabary?

CGk *zo* ( , ) so far has been ascertained to transcribe the Cypriot outcome of Proto-Greek */gj/ and */g^{w}j/ (Table 3.68).

Table 3.68: Diachronic sources of the sound transcribed by CGk *zo*.

Development	**Example**			
	Proto-Greek	**Cypro-Greek**	**Gloss**	**Koine**
*/gj/ > *z*	**olígjōn*	*o-li-zo-ne*[624]	'younger'	ὀλίζων
*/g^{w}j/ > *z*	**g^{w}jōwó-*[625]	*zo-wo-*	'alive, living' (in several PNs)[626]	ζωός
	**g^{w}jōnti-*[627]	*zo-si-*	'living' (element in PN)	ζῶσι

Thus prehistoric */g/ and */g^{w}/ were fronted before a palatal glide.[628] Egetmeyer and other authors interpret the synchronic value of CGk *z* as /ʣ/,[629] but it is by no means

[624] In *Karnak* 13 (*DGAC*: 124, 298).
[625] Personal reconstruction, based on the PIE form **g^{w}i̯ōh$_{3}$u̯-ó-* (see Klein 1988 apud Beekes 2010: 217) and the Greek evidence.
[626] For a list of names containing this element, see *DGAC*: 125, 324–325.
[627] Own reconstruction.
[628] It should be noticed that unlike */g^{w}j/, the sequence */g^{w}i/ pssibly does not seem to undergo fronting in the Cypriot dialect: cf. the personal name *sa-wo-pi-o* /Sawo-bíos/, where /-bíos/ < **g^{w}íos* < PIE **g^{w}ih$_{3}$os* (*DGAC*: 211). In terms of relative chronology, this suggests that the development */g^{w}/ > /b/ (cf. CGk *pa-si-le-wo-se* /basilēwos/ vs. Mycenaean *qa-si-re-u* /g^{w}asiléus/) took place after the fronting of /g^{w}/ before /j/, but before the same shift could occur before /i/. Unfortunately, this is based on a single and onomastic example.
[629] *DGAC*: 184, citing Morpurgo Davies (1988: 120, n. 42) and Teodorsson (1993: 308). It seems that [dz] is suggested based largely on the phonological interpretation of ζ in other Greek dialects, especially Attic. However, it is perilous to merely transport the interpretation of a sound in a dialect to its counterpart in another dialect.

certain that this was its precise pronunciation. Again, we would expect an affricate sound from the following continuum:

[gʲ] > [ɟ] > [ɟʝ] > [ɟʒ] > [ʣ] > [ʤ] > [ʤ] > [z]

There are no examples of */dj/ > CGk *z* up to date, but alphabetical glosses from Hellenistic times show that the Cypriot Greek voiced coronal was eventually subjected to fronting as well.[630]

There is one important difference between the Cypro-Greek syllabary and Linear B: the Cypriot *z* series apparently was used for a voiced palatal/affricate, but not for a voiceless counterpart. This is clear from examples where the outcome of */kʷi/, as well as */ktj/ and */kʰj/ (and possibly also */kʷe:/), is transcribed with CGk *s* (Table 3.69).

Table 3.69: Cypro-Greek transcriptions of the outcome of fronted */kʷ/, */kt/ and /kʰ/.

Development	**Example**			
	Proto-Greek	**Cypro-Greek**	**Gloss**	**Koine**
*/ktj/ > *s*	**wanaktja*	*wa-na-sa(-se)*	'lady'[631]	ἄνασσα
*/kʷe:/ > *s*	**weikʷēs*	*we-i-se-se*	'(do not) say' (2nd sg. subj. act.)[632]	εἶπῃς
*/kʷi/ > *s*	**kʷis*	*si-se*	'whoever'[633]	τις
*/kʷi/ > *s*	optative of *kʷíō	*si-o-i*	optative of 'honour'	τίοι
*/kʰj/ > *s*	**dwi-kʰ-jó-*	*ti-wi-so(-ni-ta-se)*	'twofold, double'; element in PN */Dwi(s)sōnidās/[(?)634]	δισσός

Probably all these sequences had merged with /s/, or nearly, as early as the 5th century BCE, most likely through an affricate stage, [ʧ] or [ʦ]. One Hellenistic gloss substantiates the development: σί βόλε· τί θέλεις. Κύπριοι ("What do you want? Cypriots"; Hsch. *σ* 570).[635] However, it is not impossible that here alphabetical σ represented a dialectal affricate [ʦ]. At any rate, since /kʷ/ was fronted before /i/ prior the shift of labiovelars, it seems that fronting was more advanced with this sound than its voiced counterpart /gʷ/. Generically, the Cypriot developments seem similar but more advanced than those of its close relative, the Arcadian dialect. In the latter, */kʷi/ yields most probably an affricate sibilant, transcribed with ζ, the digraphs ζτ and τζ, or the special letter Ⲛ—which, unlike its cognate in the Cypriot dialect, was finally de-

[630] See *DGAC*: 125, 184.
[631] In *ICS* 7.4, 16.2, 17.4, 90.2 and 91.3 (see *DGAC*: 124). The proto-form is debated, but the stem is probably **wanakt-* (cf. Attic ἄναξ, -ακτος, and Phrygian *vanaktei*).
[632] Alonso Déniz (2014: 82-86).
[633] In *ICS* 217.A 10.B 23 et 29; see *DGAC*: 185, 208, 564.
[634] In *ICS* 84.3; see *DGAC*: 124 and also 134, 288.
[635] Duhoux (2006:31); *DGAC*: 208.

affricated to a stop (written with τ).[636] The less closely related Pamphylian possibly retained the affricate stage, as suggested by the spelling ϝανα𐠈α (< **wanakt-ja*) 'lady'.[637] However, Egetmeyer admits that the *s* series may have been chosen for transcribing the fronted voiceless velars not because Cypriot went beyond the affricate stage into a fricative /s/, but due to the lack of a *zi* sign in the Cypro-Greek syllabary.[638] Of course, it all depends on whether the outcome of the above sequences had already reached the /s/ stage when Cypro-Greek was created. If not, one still has to wonder what Cypro-Minoan signs were available to reuse in the rendering of affricates. Whichever might be the case, CGk *z* clearly represents only a voiced sound.

We still need to examine the exceptional Cypro-Greek syllabogram which decipherers at first transliterated as *ga*, but soon after and up to this day interpreted as *za*, meaning it was likely a member of the same series as *zo*.[639] The key to interpret this syllabogram are its attestations: all words written with it and whose interpretation is indisputable contain etymological **g*, as shown by the Koine comparanda (Table 3.70). We have seen that Cypro-Greek distinguishes stops only as per their articulation point: thus *p* = /p, p^h, b/, *k* = /k, k^h, g/, and *t* = /t, t^h, d/. Unlike Linear B, this is systematic in the Cypriot syllabary. As a result, it seems unlikely that velar stops would have received a special treatment, with an exceptional syllabogram for the syllable /ga/, and no full series with *ge, gi, go, gu*. Instead, this *g*/*za* is attested *very few times* a takes the place normally reserved for *ka*: cf. CGk *a-**g/za**-ta-i* */á**ga**t^hāi/ vs. *a-**ka**-to-ke-re-o-ne* /A**ga**t^hokreōn/. This implies that *g*/*za* initially denoted a consonant other than /g/ that was relatively rare in the Cypriot Greek dialect. This special sound would then have merged, or at least become similar to, an allophone of /g/ before /a/, hence causing the *g/za* ~ *ka* alternations.[640]

[636] Duhoux (2006).
[637] For the spelling, see Brixhe (1996: 56-57, 60); for the protoform, see Table 3.69.
[638] *DGAC*: 185, 208.
[639] *ICS*^{2}: 54, *DGAC*: 184, 189.
[640] It is more probable that CGk *g/za* transcribed *primarily* a phoneme of Cypriot Greek, and was only secondarily used for an allophone of /g/, as writing systems that develop signs exclusively for allophones are very rare.

Table 3.70. Attestations of CGk *g/za*(?).

Word	Meaning	Etymology	Koine	Date (BCE)
*a-**za**-la-ma*[641]	'statue'	*/ágalma/	ἄ**γα**λμα	Late 3rd c.[642]
*a-**za**-mo-se*[643]	'unmarried'	*/ágamos/	ἄ**γα**μος	4th c.
*a-**za**-ra-wo-ne*[644]	'name of a month'	*/Agarwōn/(?)[645]	—	650-500
*a-**za**-ta-i*[646]	'Fortune'(dat.)[647]	*/ágat^{h}āi/	ἀ**γα**θαί	Late 3rd c.
*e//u//**za**-we//i-te*[648]	?	?	?	Uncertain[649]
*i-sa-**za**-ta-se*(-)[650]	MPN	*/Isagat^{h}ās/[651]	-α**γα**θα-	6th-4th c.
***za**-i*[652]	'earth, land' (dat. sg.)	*/gai:/	**γα**ῖ	ca. 450
***za**-ne*	(ac. sg.)	*/gān/	**γᾶ**ν	ca. 450
***za**-se*	(gen. sg.)	*/gās/	**γᾶ**ς	ca. 450

The transcription the sign as *za* is motivated by economy: in this way the Cypro-Greek syllabary has *za* and *zo* as members of a one syllabographic series, albeit a poorly attested one. In other Greek dialects ζ is a rare sound because historically it is the result of the conditioned fronting of certain Proto-Greek stops and of the affrication of Proto-Greek */j/. For the same reason, in the alphabetical Greek of the 1st millennium BCE the syllable ζι is only attested in a dozen foreign loanwords and native dialectal forms. Therefore, the scarceness of CGk *z* series is expected. Conversely, if we opted for the transliteration *ga*, we would end up with two defective consonantal rows, *g* and *z*, each with only one sign.[653]

[641] *Kafizin* 292. The inscription is quite fragmentary, but with little doubt a votive inscription (see *DGAC*: 658), so the mention of a statue makes sense contextually.
[642] The inscriptions from Kafizin have been dated to the late 3rd century BCE, and particularly to the reigns of Ptolemy Philadelphos and Euergetes or of Euergetes and Philopator (Mitford 1950: 99).
[643] *ICS* 213a; see *DGAC*: 627. Despite difficulties of interpretation, the text seems consistent with an epitaph. The full inscription reads: *i-ta-te* | *e-ko-ne* | *ke-i-ma-i* | *ka-e-ta* | *o-po-te-nu-u-ke-ne-i* | *wo-i-wa-ni-ja-se* | *mo-sa-se* | *o-pu-we-ne* | *a-ga-mo-se* | *ka-te-tu-i-ne*. The beginning is clear based on analogous texts: ἰνθάδε ἐγών κεῖμαι 'Here I lie…". The equation of *a-g/za-mo-se* with Attic ἄγαμος 'unmarried' is makes sense if Mitford (1958: 264 apud *DGAC*: 524) is right that *o-pu-we-ne* is ὀπύςε̄ν 'to wed' (cf. Attic ὀπυίω).
[644] *ICS* 327; *DGAC*: 575-577.
[645] *DGAC*: 188, 265.
[646] *Kazafin* 201, 202 and *ICS* 320, 335.
[647] Attested in the phrase *i-tu-ka-i a-ga-ta-i* 'to Good Fortune' = Phoenician *ybrk* (see *DGAC*: 637).
[648] *ICS* 254 (see *DGAC*: 504, 722). Hoffmann (1889) read εὖ ζαϝεῖτε and discussed two possibilities: (1) an optative present form of the verb ζά(ϝ)ημι (= διάημι 'blow through'), or a derivative of the related ζάϝες- (cf. Homeric ζαής 'strong-blowing, stormy'); (2) an optative form of γαϝ- (Attic. γαίω) 'rejoice'.
[649] See section 3.3.2.3 in this thesis.
[650] *ICS* 154.1.
[651] *ICS* 79.1. See *DGAC*: 188.
[652] *ICS* 217. See *DGAC*: 125, 188. All probably from */gā/ 'earth, land'. The interpretation is not secure and some scholars derive *ga-ne* from */gi̯ān/ 'life'. In any case, I agree with Egetmeyer that it is most economical to interpret the three cases as the same word
[653] A similar point was made by O. Masson (*ICS*^{2}: 54–55).

According to Egetmeyer, the affricate /dza/ interpretation was finally preferred over /ga/ on the basis of two Cypriot glosses in Hesychius' lexicon: ζάβατος· πίναξ ἰχθυηρός· Πάφιοι ("plate of fish; Paphians": Hsch. ζ 2) and γάβαθον· τρυβλιόν ("dish, plate"; Hsch. γ 3).[654] Since γάβαθον has been taken to be a Semitic borrowing in Greek,[655] the two glosses were regarded as confirmation of the shift γ > ζ. Yet ζάβατος seems to be a product of post-Hellenistic modifications to the Hesychian text, and unrelated to any Cypriot phenomenon: a better translation of πίναξ ἰχθυηρός is "scaled plate" as a reference to a piece of armor with metal plates. Thus ζάβατος becomes comparable to ζαβάτος 'loricatus' and ζάβα 'lorica, cuirass'. The latter seem to be Late Antique words,[656] and possibly have some relation to Arabic *jubbah* 'a waistcoat'.[657] Hence, ζάβατος has little to do with γάβαθον '(eating) plate'.[658]

However, this unsatisfactory example is compensated by another lexicographic pair which to my knowledge has not been signaled before. In a scholium to the Hellenistic poem *Alexandra* (831) by Lycophron, we find a reference to Γαύας· Γαύας δὲ ὁ Αδωνις παρὰ Κυπρίοις ("Gauas: Gauas, Adonis amongst Cypriots"). This presumably Cypriot divine name is remarkably reminiscent of Ζαυάνας, glossed by Hesychius as "a god at Sidon" (Ζαυάνας· θεός τις ἐν Σιδῶνι; Hsch. ζ 70). Given the Phoenician presence in Cyprus and the numerous Cypro-Phoenician religious syncretisms, the equation seems plausible. Phonology is hardly a problem: it is sufficient to assume an original *non-Greek* Cypriot form **Gawan-*, where **g* could be a sound between [g] and [ʣ] that was borrowed into Greek as *Γαύαν-ς > Γαύας (gen. Γαύαντος), but into Phoenician as **Zawan*(?)—afterwards rendered by Hesychius as Ζαυάνας. Alternatively, the theonym could simply have been Phoenician, but transmitted to Cypriot Greek and Hesychius via different sources, with different dialectal treatments of /g/ before /a/.[659]

To recapitulate, we seem to have more grounds to assume the sign's value was *za*, therefore belonging in the same series as *zo* and representing an affricate phoneme

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[654] *DGAC*: 189 citing Egetmeyer (1993: 147) and É. Masson (1967: 70-76).

[655] This word must be related to καβαθα (*Edict. Diocl*. 15.51) and possibly κόβαθος 'a vessel' (see Beekes 2010: 792). The relevant Semitic comparanda are Ugaritic *qbʕt* 'goblet' and Hebrew *qubbaʕat* 'cup' (see *DULAT*: 691-692). The alternating γ ~ κ might indicate different strategies for spelling a foreign uvular stop /q/.

[656] According to the *Souidas* lexicon, both words are first attested in the times of Justinian (r. 527-565 CE).

[657] Cf. Kolias (1980).

[658] Besides ζάβατος, the lexicon includes the identical ζάματος · πίναξ ἰχθυηρός παρὰ Παφίοις. ("board of scales amongst Paphians": Hsch. ζ 44), as well as ζάματιον· τρυβλιόν 'bowl" (Hsch. ζ 44), with the same meaning as γάβαθον. This means that the entries relating to ζάβατος in the manuscript might have undergone even more interference. *DGAC*: 202 mentions that we are dealing with forms corrected from ζά<λ>ματος and ζά<λ>ματιον.

[659] One can mention the Punic phrase *gunebel* 'majesty of (god) Bel', attested in Latin transmission in Plautus' *Poenulus* (1027; cf. also *DNWSI I*: 207). The element *gune-* is cognate with Hebrew *gʔwn* /gāʔōn/ 'height, eminence' (Sanmartín 2015: 311), which is also combined with divine names in the Bible (cf. *Exodus* 15: 7, *Micah* 5: 3 and *Isaiah* 2: 10). We can thus envisage an earlier Phoenician noun **gʔn* /gāʔōn/ that was used as a divine epithet. Yet, given phonological difficulties, a possible derivation of **Gawan-* (> *Γαύαν-ς ~ Ζαυάνας) from it remains very conjectural.

that historically resulted from fronted stops /g^{w}/ and /g/ in certain environments. The existing Cypro-Greek corpus yields no examples of such use, but this may be accidental. We cannot know precisely what the actual phoneme behind *z* was, but the affricates /ʤ/ or /ʣ/ are typologically likely. In a later phase in the life of the Cypro-Greek script, there may have emerged a fronted allophonic pronunciation of /g/ before /a/ that was close to the sound of *z* in terms of articulation.[660]

We may begin by addressing two objections posed by Egetmeyer against this possibility. First, he thinks this development is "improbable" based on four Cypriot glosses in Hesychius plus Lycophron's Γαύας, all showing unchanged alphabetical γ. Yet we have already seen that Γαύας actually supports the shift if we compare it to the Sidonian gloss Ζαυάνας. The second objection of Egetmeyer is typological:

> "Phonétiquement, il s'agirait d'une palatalisation de la sonore /*g*/ devant /*a*/ sans qu'il y ait d'exemples pour une palatalisation de la sourde /*k*/. Cette dernière devrait en effet être atteinte la première et on attendrait des exemples d'une palatalisation de ces deux consonnes devant les voyelles palatales /*e*/ et /*i*/."

There is a way to address these preoccupations. We would indeed expect to the fronting of /k/ before /a/ to take place prior to the fronting of /g/ in the same position. However, if this was the case (and we should not expect this fronting to farther than [ʦa]), there would not have been a sign for a *voiceless* affricate + *a* to be used as an alternative to *ka*. The difference lies here: *za* denoted a voiced sound and so it could become an alternative to *ka* in the rendering of the fronted outcome of voiced /ga/ (Table 3.71). Indeed, if the origin I proposed earlier for CGk *ke* and *ki* is correct, then from the start these syllabograms represented fronted pronunciations /k/, whereas *ka* did not. This means that after the presumable palatalization of /g/ before /e/ and /i/, *ke* and *ki* were by nature fit for spelling the new fronted allophone, but *ka* remained inadequate for fronted /ga/. CGk *za* was the optimal alternative.

As a consequence, CM 107 > CGk *za* and CM 59 > CGk *zo* favor the view that Cypro-Minoan possessed a *z* series that represented a *voiced* sound, probably a palatal obstruent or sibilant affricate, but which would have been different from the *z* series inherited from Linear A—if there was one in Cypro-Minoan. Therefore, I suggest the hypothetic values of $za_2^{??}$ and $zo_2^{??}$ for CM 107 and CM 59, respectively, while maintaining $k/ze^{??}$ for CM 112.

[660] For the fronting of a velar stop before /a/, cf. e.g. Late Latin *gamba* > French *jambe* /ʒãb/ 'leg'.

Table 3.71: Hypothetical development of the velar stops and voiced affricate in Cypriot Greek with the respective spellings.

Proto-Greek source	**Earlier CGk stage**		**Later CGk stage**	
	Realization	**Spelling**	**Realization**	**Spelling**
**ka*	[ka]	*ka*	> [kʲa ↔ tsa]	*ka*
**ke*	[kʲe ↔ tse]	*ke*	[kʲe ↔ tse]	*ke*
**ki*	[kʲi ↔ tsi]	*ki*	[kʲi ↔ tsi]	*ki*
**k*$^{(w)}$*i*	[si]	*si*	[si]	*si*
ga	**[ga]**	***ka***	**> [gʲa ↔ dza]**	***ka ~ za***
**ge*	[gʲe ↔ dze]	*ke*	[gʲe ↔ dze]	*ke*
**gi*	[gʲi ↔ [dzi]	*ki*	[gʲi ↔ dzi]	*ki*
***gja*, etc.**	**[dza]**	***za***	**[dza]**	***za***
**g*^{w}*jo*, etc.	[dzo]	*zo*	[dzo]	*zo*

3.4.5 The liquid series: l and r

The following developments are straightforward: LA 60/*ra*$^{?}$ > CM 87 > CGk *la* (see Tables 3.11 and 3.72),[661] LA 60/*ri* > CM 09 > CGk *li* (Table 3.73),[662] and LA 02/*ro* > CM 05 > CGk *lo* (Tables 3.16 and 3.74).[663]

Table 3.72: Comparison between CM 87 and CGk *la*.

CM 87			**CGk *la***
 ENKO Abou 030	 ENKO Abou 069	→	 *ICS* 318.B.VII.2
 HALA Abou 001	 MYRT Avas 001		 *ICS* 327.A.4

[661] See already Daniel (1941: 254).
[662] Saporetti (1976: 91) was the first to compare CM 09 with CGk *li* (É. Masson 1974 read CM 09 as *li*/*e* based on alleged onomastic identifications), while the inclusion of LA 60/*ri* as a comparandum is first seen in Nahm (1981: 54, Abb. 2).
[663] Already Daniel (1941: 254).

Table 3.73: Comparison between LA 53/*ri*, CM 09, and CGk *li*.

LA 53/*ri*			**CM 09**			**CGk *li***	
							
HT 90.1	HT 121.1	→	ENKO Arou 001.13	ENKO Abou 032	→	*ICS* 318.A.II.4	*Kouklia* 238
							
HT 128a.4	HT Zb 158.b		RASH Atab 004.A.10	CYPR Mvas 003		*ICS* 183a	*ICS* 210.1

Table 3.74: Comparison between CM 05 and CGk *lo*.

CM 05			**CGk *lo***	
				
ENKO Abou 018	ENKO Abou 040	→	Casabonne and Egetmeyer (2002)	*ICS* 158
				
ENKO Abou 067	HALA Abou 002		*Rantidi* 2	*ICS* 327.A.3

These three developments imply strongly that LA *r*, whose underlying sound is uncertain (see 3.2.3.2.3), was the basis for a liquid series in Cypro-Minoan, which in turn was the source for CGk *l*.

Beyond the recognition that CM 24 is the formal prototype of Paphian CGk *le* (see Table 3.75), which occurs already in the Opheltas' spit (PPAP Mins 001), in the study of ENKO Atab 001 above I proposed as a working hypothesis that LA 27/*re*[??] > CM 24 (see 3.2.2.2). The three developments that point to LA *r* > CM > CGk *l* make it less difficult to accept the evolution of LA 27/*re*[??] > CM 24 > CGk *le*.[664] We would, in this case, have four Cypro-Minoan signs with a similar trajectory, one in which they were part of the same series. We may also investigate the possibility that this hypothetical series had a fifth syllabogram. Again, hand in hand with the proposal that LA 27/*re*[??] > CM 24, I hypothesized that LA 26/*ru*[??] > CM 28 (see 3.2.2.2).[665] CM 28

[664] The comparison between the three signs was first proposed by Nahm (1981: 56, Abb. 3), even before the discovery of the Opheltas' spit made the equation CM 24 > CGk *le* obvious (the latter is now contemplated, e.g. by Duhoux 2009b).

[665] Nahm (1981: 56, Abb. 3) compares LA 26/*ru*[??] and CM 28, but makes the unlikely claim that CGk *ru* (𐔓) is also connected to them.

(𐄐) has no obvious continuation in Cypro-Greek, but it is not wholly inconceivable that CGk *lu* (𐄑) derived from it, even if we need to assume a paleographical change to its lower portion (Table 3.76). Notice that CM 23/*ti*[??] (𐄏) > CGk *ti* (𐄒), so the shape 𐄐 may have been intentionally modified to 𐄑 in early Cypro-Greek to avoid ambiguity.

Table 3.75: Comparison between CM 24 and Paphian CGk *le*.

CM 27		**PPAP Mins 001**	**Paphian CGk *le***	
 ENKO Abou 030	 ENKO Abou 067		 *ICS* 178	 *ICS* 176a-b
 HALA Abou 001	 HALA Abou 002		 *Rantidi* 9	 *Kouklia* 40

Table 3.76: Hypothetical developments from LA 27/*re*[??] and LA 26/*ru*[??] to CGk *le* (Paphian) and *lu*.[666]

 LA 27/*re*[??]	→	 CM0 11	→	 CM 24	→	 Opheltas' spit *le*	→	 Paphian CGk *le*
 LA 26/*ru*[??]	→	 CM0 10	→	 CM 28	→	 CGk *lu*		

For the sake of argument, let us consider these two more tentative proposals alongside the three more straightforward ones above. One of the peculiarities of Linear B is its use of a single syllabographic series, transliterated *r* by convention, for denoting the phonemes /l/ and /r/. This situation, unideal from the Greek point of view, appears to be inherited from Linear A, but we do not know exactly what sound LA *r* represented, or whether it actually transcribed more than one phoneme, as in Linear B (3.2.3.2.3). Cypro-Greek presents different circumstances, this time ideal from a Greek perspective: it has separate liquid series, *l* for /l/ and *r* for /r/. This suggests that at some point in the evolution from Linear A to Cypro-Greek there was a structural modification. Evidence indicates that this took place in Cypro-Minoan. Thus, CGk *ra*, *re*, and *ro* have obvious formal predecessors in Cypro-Minoan: CM 75 > CGk *ra*, CM 33 > CGk *re* and CM 97

[666] Notice that the developments hypothesized for these signs can hold even if the interpretation of forms CM0 10 and 11 as distinct graphemes (see 3.2.2.2) is incorrect.

> CGk *ro* (see Tables 3.77-3.79),[667] but no antecedents whatsoever in Linear A, thus hinting strongly at a Cypro-Minoan innovation.

Table 3.77: Comparison between CM 75 and CGk *ra*.

CM 75			**CGk *ra***	
				
ENKO Arou 001.05	ENKO Atab 003.A.02	→	*ICS* 157	*ICS* 367
				
RASH Atab 004.B.12	KALA Arou 004.03		*ICS* 327	*Rantidi* 12a

Table 3.78: Comparison between CM 33 and CGk *re*.

CM 33		**CGk *re***	
			
ENKO Atab 003.A.04	→	*ICS* 369a	*ICS* 157
			
KALA Arou 002.05		*ICS* 327.B.16	*Rantidi* 31

Table 3.79: Comparison between CM 97 and CGk *ro*.

CM 97		**PPAP Mins 003**	**CGk *ro***	
				
ENKO Abou 048	ENKO Avas 002[668]		*ICS* 18c	*ICS* 176a-b
				
KITI Avas 001	CYPR Mvas 002		*ICS* 158[669]	*Rantidi* 30

[667] The three correspondences were observed by Saporetti (1976: 92, 94).
[668] Drawing from É. Masson (1979b: 560, fig. 2), apud *HoChyMin*: 176.
[669] Drawing from *ICS*^{2}: fig. 43.

Conversely, the two variants of CGk *ri* (Paphian 𐠊 and "Common" 𐠋) and CGk *ru* (𐠌) have no straightforward correspondences even in Cypro-Minoan. The hapax CM 83 (𒀸), suggested by É. Masson as the model for Paphian CGk *ri*,[670] is not promising because it is more likely a variant of another sign.[671] This does not necessarily mean that CGk *ri* and *ru* lack predecessors in Cypro-Minoan, only that we cannot detect them easily relying on form alone. Still, the absence of a Cypro-Minoan precursor for CGk *ru* may be real, possibly to be compared with the lack of Bronze Age prototypes for CGk *nu* (𐠇) and *tu* (𐠓); the latter rather appear to be innovations in the Cypro-Greek syllabary, perhaps based on the shapes of CGk *no* (𐠏) and *to* (𐠔, 𐠕), respectively.

A clear picture emerges from this survey (see Table 3.80).

Table 3.80: Summary of the correspondences proposed for the liquid series of Linear A, Cypro-Minoan and Cypro-Greek (P = Paphian; C = Common).

Linear A		**Cypro-Minoan**			**Cypro-Greek**	
Sign	**Value**	**No.**	**Sign**	**Value**	**Sign**	**Value**
𐘀	*ra*	87	𒆷 𒉿	*la*[??]	𐠛	*la*
𐘁	*re*	24	𒄀 𒄁	*le*[??]	𐠝 (P)	*le*
𐘂	*ri*	09	𒅆 𒅇	*li*[??]	𐠞	*li*
𐘃	*ro*	05	𒀸	*lo*[??]	𐠟	*lo*
𐘄	*ru*	28	𒌑 𒌒	*lu*[??]	𐠠	*lu*
—	—	75	𒍝	*ra*[??]	𐠢 𐠣	*ra*
—	—	33	𒐈	*re*[??]	𐠤 𐠥	*re*
—	—	?	?	?	𐠊 (P) 𐠋 (C)	*ri*
—	—	97	𒐪 𒐫	*ro*[??]	𐠦	*ro*
—	—	?	?	?	𐠌	*ru*

We do not know whether LA *r* transcribed was a lateral, a rhotic, or both (see 3.2.3.2.3), but its ultimate fate in Cyprus was to represent Greek /l/. Conversely, a set of Cypro-Minoan signs with no Aegean background was recycled in Cypro-Greek, as a second liquid series, to transcribe /r/. This strongly implies that LA *r* was *maintained* or *specialized* (depending on its value) as *l*[??] in Cypro-Minoan, while a new series, which we can transliterate tentatively as *r*[??], was introduced for distinguishing one or more rhotic sounds.[672] This explanation accounts for all facts with the least assumptions. The

[670] É. Masson (1987b: 372),

[671] *HoChyMin*: 99. See also 2.2.1.4 in this thesis.

[672] It is worthwhile noting in passing that ENKO Atab 001 contains four signs suspected of being inherited from LA *r* and counterparts to CM *l*[??] (CM 01 > CM 87/*la*[??], CM0 07 > CM 05/*lo*[??], CM0 10 > CM 28/*lu*[??] and CM0 11 > CM 24/*le*[??]), but none comparable to CM 33/*re*[?], CM 75/*ra*[?], CM 96/*ri*[?] or CM 97/*ro*[?]. Even considering the fragmentary state of the text and the hypothetic nature of the readings, is this a coincidence or a symptom that a new CM *r*[??] series had not yet been introduced?

phonetic values hypothesized as a consequence of the foregoing survey are summarized in Table 3.80.

3.4.6 The labial series: m, p, w and some uncertain signs

For reasons that will become clear below, it is convenient to examine in conjunction the evidence for the existence of three or more Cypro-Minoan series that represented labial sounds. I begin with the *p*[??] series, by far the more uncontroversial. On one hand, there is solid comparative evidence for at least four syllabograms (*pa*[??], *pe*[??], *pi*[??], *po*[??]). On the other hand, it would be statistically unlikely to find that the language for which Cypro-Minoan was devised did not at least possess one bilabial stop, /p/, /b/, or another, as such phonemes are not usually lacking in human languages (as already detailed in 3.2.3.2.1.2).

Assigning the hypothetic value *pa*[??] to CM 06 hardly needs much discussion, as scholars have long seen in its schematic and virtually unchanged shape the bridge between LA 03/*pa*[?] and CGk *pa* (see 3.2.2.2 and Table 3.81 here).[673]

Table 3.81: Comparison between LA 03/*pa*[?], CM 06, and CGk *pa*.

LA 03/*pa*[?]			**CM 06**			**CGk *pa***	
							
HT 24a.4	HT Wc 3002	→	ENKO? Psce 002[674]	CYPR Mvas 002	→	*ICS* 258	*ICS* 178
							
PK Za 12.d	ZA 11a.5		ATHI Adis 001	PPAP Mvas 001		*ICS* 176	*ICS* 327.A.4

The tentative reading of CM 11 as *pe*[??] requires a bit more commenting. So far no syllabogram *pe* has been identified in Linear A (cf. Table 3.9), LB *pe* being presumably an innovation. Thus, it is no surprise that CM 11, the predecessor of CGk *pe* (Table 3.82),[675] has no counterpart in the Minoan script either. The sign is most probably a Cypro-Minoan invention[676]—and an early one, judging by its attestation in ENKO Apes 001 (Table 3.34).

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[673] See already Daniel (1941: 254).
[674] Drawing from O. Masson (1957: fig. 7).
[675] As seen by Faucounau (1980: 379, fig. 1) and Nahm (1981: 56, Abb. 3), with the usual lack of paleographical demonstration.
[676] See already Palaima (1989b: 53).

Table 3.82: Comparison between CM 11 and CGk *pe*.

CM 11	**PPAP Mins 001**	**CGk *pe***	
			
ENKO Arou 001.12		*ICS* 327.B.20	*Rantidi* 29
			
ENKO Atab 003.B.17		*ICS* 165a.2	*ICS* 143

The proposition of CM 50/51 as the syllabogram *pi*[??] also necessitates some arguing. Saporetti compared form CM 49 () to CGk *pi* (),[677] but this was based on the drawing of É. Masson (). We have now seen in 2.3.9 that forms CM 39 and 49 are most probably allographs, and that their form is not as portrayed by the French scholar. Conversely, a late variant of CM 50/51 seen in the clay balls (and probably in KITI Ipla 001.*r*) has moved away from the more diagnostic forms—perhaps due to some cursivization in the later stages of Cypro-Minoan—and is comparable to CGk *pi* (Table 3.83). There is one crucial advantage to this scenario: CM 49 () is not very similar to LA 39/*pi* (), but the earliest instances of CM 50/51 () bear some resemblance to the Aegean sign, especially if we take into account the variants documented at the eastern Cretan site of Petsofas, near Palaikastro (Table 3.83). It is true that the match between LA 39/*pi* and CM 50/51 is not straightforward, and that we would have to assume a degree of simplification of the Aegean form, but the proposed relationship LA 39/*pi* > CM 50/51 > CGk *pi* is more comprehensive in its ability to explain the developments of Cypro-Minoan. In fact, without providing many details, Nahm has already compared the three signs.[678] Thus, I ascribe the tentative value of *pi*[??] to CM 50/51, which evidently needs to be tested by other procedures.[679]

[677] Saporetti (1976: 91). The same view is followed by Facchetti et al. (2013: 65).
[678] Nahm (1981: 56, Abb. 3).
[679] É. Masson (1973; 1974) assigned the value *p*/*bi* to CM 51, but did so because she supposed that the sequence 51-28 in RASH Atab 004 concealed the Semitic word /binu/ 'son'.

Table 3.83: Comparison between LA 39/*pi*, CM 50/51, and CGk *pi*.

LA 39/*pi*		**CM 50/51**				**CGk *pi***	
							
PK Za 8.c	→	ENKO Arou 001.26	ENKO Abou 041	ENKO Abou 041	→	Casabonne and Egetmeyer (2002)	*ICS* 346
							
PK Za 11.b		RASH Atab 004.A.05	ENKO Abou 041	KITI Ipla 001.*r*		*ICS* 158	*Rantidi* 37

The correspondence LA 11/*po*[?] > CM 12 > CGk *po* has long be posited,[680] but is not accepted by all scholars.[681] Nevertheless, the three scripts show very identical schematic shapes, and in all of them the sign in question can be drawn leftwards or rightwards (Table 3.84), although with the Cypro-Greek syllabaries this is due to the use of different writing directions. The fact that CM 12 *looks* different in CM 2 () should not be taken as counterevidence: the CM 2 variant most probably owes to the formal simplification which for epigraphical reasons is typical of this subcorpus. In fact, its shape did not prevent it from being listed together with the variants of CM 1 by É. Masson and Olivier. Epigraphical reasons also explain the simplified form of 12 in CYPR? Psce 002 (), which was inscribed in a hard medium (lapis-lazuli). I therefore consider the equation legitimate and propose the hypothetic value *po*[??] for CM 12.

Table 3.84: Comparison between LA 11/*po*[?], CM 12, and CGk *po*.[682]

LA 11/*po*[?]		**CM 12**				**CGk *po***	
							
HT 16.4	→	CYPR? Psce 002	ENKO Atab 003.B.20	ENKO Abou 061	→	*ICS* 176.a-b	*ICS* 158
							
KH 9.1		ENKO Arou 001.03	ENKO Abou 078	CYPR Mvas 002		*ICS* 327.A.2	*Rantidi* 25

[680] Saporetti (1976: 91).
[681] Thus Steele (2013: 71-72), who does not consider the evidence of Linear A.
[682] I did not use the instance in KITI Avas 012 because the sign in question is too close to a fracture and I think it is not absolutely safe that it is CM 12.

Arguing for the existence of a *pu*[??] syllabogram that would make for a complete CM *p*[??] series is much more complicated. There are three Cypro-Minoan signs that could occupy this slot: CM 37, 41, and 61. CM 41 (,) is a priori the most obvious choice, as it bears a close resemblance to LA 50/*pu*[??] (). The problem is that it is also similar, albeit less, to LA 49 (,), one of the untransliterated signs of the Minoan syllabary (Table 3.85).

Table 3.85: Comparison between LA 49/?, LA 50/*pu*[??], CM 41, and CM 30.

LA 49/?	**LA 50/*pu*[??]**			**CM 41**	
					
HT 120.4	MI 2.1	ARKH 2.5	→	SALA Psce 001	IDAL Avas 001
					
ZA 10b.2	HT 87.4	HT Zb 161		ENKO Arou 001.10	ENKO Abou 003

We therefore cannot exclude the possibility that CM 41 is not *pu*[??], but rather something else. In fact, CGk *pu* (,) is paleographically very different from LA 50/*pu*[??] and CM 41. Instead, it is is comparable to CM 61 (,), which in turn is not very dissimilar from LA 29/*pu*$_2$[??] () (Table 3.86).[683]

Table 3.86: Comparison between LA 29/*pu*$_2$[??], CM 61, and CGk *pu*.

LA 29/*pu*$_2$[??]			**CM 61**			**CGk *pu***	
							
HT 14.3	HT 49a.7	→	ENKO Atab 003.A.17	ENKO Abou 011	→	*ICS* 158	*Kouklia* 52
							
HT Zb 160	ZA Zb 34		ENKO Abou 044	ENKO Abou 048		*Rantidi* 102	*ICS* 352a.A.11

Faucounau proposes a similar development, but with CM 37 () as the "intermediate" form between LA 29/*pu*$_2$[??] () and CGk *pu* (,),[684] as elaborated in

[683] This connection was first suggested by Nahm (1981: 56, Abb. 3).
[684] Faucounau (1977: 237, fig. 1).

Table 3.87. However, in this alternative the supposed shift from CM 37 to CGk *pu* requires a more drastic paleographical evolution. To complicate matters further, CM 37 is also a possible match for Common CGk *so* (𐄷), as we will see in 3.4.9. CM 61 presents a similar problem: besides CGk *pu*, it is comparable to CGk *te* (𐄹) (again, see 3.4.9).

Table 3.87: Comparison between LA 29/$pu_2^{??}$, CM 37, and CGk *pu*.

LA 29/$pu_2^{??}$			**CM 37**			**CGk *pu***	
			 (?)				
HT 14.3	HT 49a.7	→	ENKO Apes 001	ENKO Avas 012	→	*ICS* 158	*Kouklia* 52
							
HT Zb 160	ZA Zb 34		ENKO Arou 001.15	KITI Avas 001		*Rantidi* 102	*ICS* 352a.A.11

Posing a development from LA 29/$pu_2^{??}$ to CGk *pu*, with either CM 37 or CM 61 as "intermediate" forms, has the advantage of bridging comparanda from Linear A and Cypro-Greek. But what could have motivated the creators of Cypro-Minoan to borrow LA 29/$pu_2^{??}$ instead of LA 50/$pu^{??}$ as their *pu*?

The answer depends largely on whether the LA p_2 series as a whole, not just 29/$pu_2^{??}$, continued in Cypro-Minoan. This question is not easy to resolve because the LA p_2 series itself is poorly known (see 3.2.3.2.1.1), but at most LA 56/$pa_3^{??}$ (𐄳) is formally identical with CM 72b (𒄩) (Table 3.88).[685]

Table 3.88: Comparison between LA 56/$pa_3^{??}$ and CM 72b.

LA 56/$pa_3^{??}$		**CM 72b**
		
HT 28a.1	→	ENKO Atab 003.A.11
		
ZA 14.4		

[685] Excluding CM 72 (𒄨), which appears to be an allograph of 69 (𒄧) (see 2.3.15).

As a result, the most neutral decision is to assign the following tentative values:

CM 37 → *pu*(2)[??]/*so*[??] (see also 3.4.9)
CM 41 → *pu*[??]/?
CM 61 → *te*[??]/*pu*(2)[??] (see also 3.4.9)
CM 72b → *pa*2[??]

To conclude, the comparative-paleographical data supports the existence of a CM *p*[??] series, but CM *p*2[??] remains much uncertain (see Table 3.89). Although CM *p*[??] likely represented a bilabial stop, the fact that we ignore the exact articulation of Minoan *p* and that CGk *p* denotes /p/, /b/ and /p[h]/, makes the precise phoneme behind this series impossible to establish. Nonetheless, it is worthwhile mentioning that [p] is the most frequent bilabial stop in the languages of the world.[686]

Table 3.89: Comparative evidence for CM *p* and *p*2 *series*.

Linear A			**Cypro-Minoan**		**Cypro-Greek**		
Sign	**Value**	**Realization**	**No.**	**Sign**	**Sign**	**Value**	**Realization**
𐘀	*pa*	/Pa/[?]	06		𐠀	*pa*	/pa, ba, p[h]a/
—	—	—	11		𐠁	*pe*	/pe, be, p[h]e/
𐘂	*pi*	/Pi/[?]	50/51		𐠂	*pi*	/pi, bi, p[h]i/
𐘃	*po*	/Po/[?]	12		𐠃	*po*	/po, bo, p[h]o/
𐘄	*pu*	/Pu/[?]	41		—	—	—
𐘅	*pa*3	/fa/[?]	72b		—	—	—
𐘆 𐘇	*pu*2	/fu/[?]	37		𐠄	*pu*	/pu, bu, p[h]u/
			61				

Of the four *m* syllabograms that have been identified in Linear A, Cypro-Minoan seems to have preserved no more than one, possibly two. CM 53/54/55 compares well with LA 80/*ma* (𐘘), agreeing in part with previous suggestions by Nahm and Davis.[687] The correspondence is clearer with the variant CM 55 as attested in some of the earliest inscriptions, particularly KALA Mbij 001-002 (1425-1375 BCE) and PYLA Psce 001 (1325-1225? BCE) (Table 3.90).

[686] It is present in 83.15% of *UPSID* languages and 86.91% of the sound systems in *PHOIBLE*.
[687] Nahm (1981: 56, Abb. 3); B. Davis (2011: 72).

Table 3.90: Comparison between LA 80/*ma* and CM 53/54/55.

LA 80/*ma*			**CM 53/54/55**	
		→		
PH Wc 40.a	CR? Zf 1		KALA Mbij 001	PYLA Psce 001
				
PYR 1.1	MA 2c.2		ENKO Arou 001.03	ENKO Atab 003.A.12

The fate of CM 53/54/55 in Cypro-Greek is far more uncertain and, for reasons specified below, needs to be discussed along with the origin of the Cypro-Greek syllabogram *wa* (𐠳, 𐠴). For now, suffice it to say that it is not impossible that CM 53/54/55 is the source of CGk *ma* (𐠷, 𐠸),[688] although one would have to assume significant paleographical developments (see Table 3.91).

Table 3.91: Comparison between CM 53/54/55, and CGk *ma* and *wa*.

CM 53/54/55			**CGk *ma***		**CGk *wa***	
		→				
RASH Atab 004.A.04	KITI Iins 002.*a*		Casabonne and Egetmeyer (2002)	*ICS* 369a	*ICS* 178	*ICS* 176a-b
						
ENKO Abou 012	PSIL? Asta 001		*ICS* 346	*Rantidi* 34	*Rantidi* 12a	*Rantidi* 20

CGk *mi* is unquestionably identical with CM 91 (Table 3.92),[689] but none is similar to LA 73/*mi*[?] (𐠩, 𐠪, 𐠫).

[688] Again Nahm (1981: 56, Abb. 3).
[689] Saporetti (1976: 92).

Table 3.92: Comparison between CM 91 and CGk *mi*.

CM 91	**IDAL Avas 002.02**	**CGk *mi***
 KITI Pblo 001  ENKO Abou 057  ENKO Abou 063  MARO Avas 004		 *ICS* 178  *ICS* 212a[690]  *ICS* 258a[691]

It is possible that CM 91 had earlier variants that were more similar to the Linear A sign. We have seen that form CM 91 is not attested in CM 2. Perhaps some other form in this subcorpus (CM 60/𐄷?) was an allograph of it. CM 91 might then be a later variant, product of a significant paleographical evolution. CYPR(?) Psce 006, an inscription on a seal dated to the first half of the 14th century BCE, contains a twice repeated sign that is unidentified but looks a lot like LA 73/*mi*[?] (cf. Table 3.93). Could this be an early version of CM 91? The issue will remain unsolved, but the fact that CM 91 is identical with CGk *mi* for now is sufficient to suggest the tentative value *mi*[??].

Table 3.93: Comparison between LA 73/*mi*[?], CM0 05, the unknown sign in CYPR? Psce 006, and CM 91.

LA 73/*mi*[?]	**CM0 05**	**CYPR? Psce 006**	**CM 91**
 MA 1.a  HT 128a.3  CR(?) Zf 1  ZA 10a.2			 RASH Atab 004.B.14  KITI Pblo 001

CGk *mu* presents a situation similar to that of CM 91 > CGk *mi*. It seems modeled on CM 39/49 (Table 3.94), as seen by early on by Daniel,[692] but it is almost certainly not related to LA 23/*mu*[??] (𐄤), which is also the logogram for 'bull' (BOS).

[690] Drawing from *ICS*[2]: 419.
[691] Drawing from V. Karageorghis (1971: fig. 86a).
[692] Daniel (1941: 254, fig. 1).

Table 3.94: Comparison between CM 39/49 and CGk *mu*.

CM 39/49			**CGk *mu***	
				
KALA Arou 001.05	ENKO Abou 018	→	*ICS* 192.1	*Rantidi* 2
				
ENKO Abou 052	ENKO Abou 076		*ICS* 220.II.3	*Rantidi* 40

Evans, and after him Daniel, noticed the lack of a Linear A predecessor for CM 39, but, based on the example in ENKO Abou 018 (), which looks like a horned animal, they proposed that the sign's source was the Cretan Hieroglyphic sign 011 (,), a ox's head.[693] There seems to be an implicit notion that LA 23 = *mu*[??]/BOS was created acrophonically, its phonetic value owing to an onomatopoeic word representing the bellowing of a bovid.[694] The problem is that the earlier instances of CM 39/49 (such as the one in KALA Arou 001.05 and, generally, CM 49; see 2.3.9) are more schematic and cannot be shown to represent a horned animal. More importantly, it is unlikely that Cypro-Minoan would borrow just this one sign from Cretan Hieroglyphic instead of Linear A. The source of CM 39/49 thus remains uncertain, but as the connection to CGk *mu* is uncontroversial, I assign it the same value as a working hypothesis.

An even more problematic case is presented by CGk *me* (), whose form suggests no predecessor whatsoever in Cypro-Minoan and has no resemblance to LA 13/*me*[?] (). Nahm proposes CM 35 () as the counterpart of CGk *me*,[695] but he argues for the equation using a normalized Paphian form [696] that is somewhat different from the earliest of examples of the Cypro-Greek sign. The comparison is very doubtful (see Table 3.95).

[693] Evans (1909: 70-72, figs. 37, 39); Daniel (1941: 255).
[694] For Younger (2010) LA 23 = *mu*[??]/BOS () derives from Cretan Hieroglyphic sign 012 (), which depicts a bull-head, and its value may therefore reflects the sound made by the animal.
[695] Nahm (1981: 56, Abb. 3).
[696] After *ICS*[2]: 66, fig. 6.

Table 3.95: Comparison between CM 35 and CGk *me* and *wi*.

CM 35		**CGk *wi***		**CGk *me***	
 ENKO Atab 00	→	*ICS* 327.A.9 	*ICS* 217.B.20 	*Rantidi* 38 	*Kouklia* 59 
 RASH Atab 004.A.08		*ICS* 318.A.I.8 	*ICS* 154c.1 	*ICS* 154.2 	*ICS* 251.1 

Up to this day no counterpart for LB 15/*mo* has been found in Linear A, so it is assumed that the Minoan script lacked such a sign, as it seems to be the case with other C*o* syllabograms. As a result, Cypro-Minoan most probably introduced an *ex novo* sign for this "slot".[697] This would explain why CM 73 (𐄪) is the potential predecessor of CGk *mo* (𐄩), but has no obvious antecedents in the Aegean (Table 3.96). CGk *mo* shows all the signs of having been gradually simplified and cursivized: in its earlier instances it retains a square or subquadrangular shape and an inner dividing line that recalls the more schematic variants of CM 73, but comes to lose this inside divider and acquires subtriangular or subcircular contours.

Table 3.96: Comparison between CM 73 and CGk *mo*.

CM 73			**CGk *mo***		
 ENKO Abou 012	 ENKO Abou 013	→	*ICS* 258a[698] 	*Rantidi* 12 	*ICS* 144 
 ENKO Abou 023	 KITI Ipla 001.*v*		*Rantidi* 59 	*ICS* 327.A.12 	*Kouklia* 3 

On the whole, these comparisons suggest a discontinuity in the *m* series across the three scripts, starting probably in Cypro-Minoan, which seems to preserve LA 80/*ma*, but not LA 13/*me*[?] (𐄦), 73/*mi*[?] (𐄪), or 23/*mu*[??] (𐄧). Only through much paleographical gymnastics we might compare 73/*mi*[?] with CM 91 > CGk *mi* or 13/*me*[?] with CM 39/49

[697] See already Palaima (1989b: 53). Nevertheless, it must be noted that, in light of the case of LA *ju*[??] > CM 88/89/90 > CGk *jo*), it seems possible for a Cypro-Minoan sign with an C*o* value to descend from a LA C*u* sign.

[698] Drawing from Karageorghis (1971: fig. 86a).

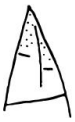
> CGk *mu*. If paleographical evolution cannot account for this great mismatch, we need to consider structural changes and the possibility that the creators of Cypro-Greek formed their *m* series with Cypro-Minoan signs that do not seem extracted from the Linear A *m* series. This hypothetical restructuration of the syllabary might have some connection to the problem that both CGk *ma* (𐄇, 𐄈) and CGk *wa* (𐄋, 𐄌) show some similarity to CM 53/54/55 (Table 3.91)—as if they are two ramifications of the same sign split in order to differentiate two sounds that were contrastive in Greek but not in the language of Cypro-Minoan. The problem is increased by the fact CGk CGk *wa* (𐄋) is identical with CM 109 (𐄍), which is a rare and apparently late form, possibly the allograph of another sign. Could it be that CM 109 represents the missing paleographical step between CM 53 and CGk *wa*, as contemplated in Table 3.97?

Table 3.97: Comparison between CM 53, CM 109, and CGk *wa*.

CM 53/54/55	**CM 109**		**PPAP Pblo 002**	**CGk *wa***	
					
ENKO Abou 012	ENKO Mvas 002	KITI Avas 006		*ICS* 178	*ICS* 176a-b
					
KITI Iins 002.a	CYPR Mvas 002	KITI Avas 010		*Rantidi* 12a	*Rantidi* 20

Remarkably, CM 109 (𐄍) > CGk *wa* (𐄋) is inconsistent with CM 95 (𐄒), which is rather matched by LA 54/*wa* (𐄒) and therefore the sign we would expect to represent CM *wa*[??] if a *w* series was borrowed into Cypro-Minoan. Notice that besides LA 54/*wa* (𐄒) > CM 95 (𐄒), Cypro-Minoan probably borrowed LA 40/*wi*[??] (𐄓) as CM 74 (𐄓) (Table 3.98).

Table 3.98: Comparison between LA 40/*wi*[??] and CM 74.

LA 40/*wi*[??]			**CM 74**
			
MA 1a	KN Zb 35	→	ENKO Atab 003.A.14
			
HT Zd 157	ZA 9.6		RASH Atab 004.B.17

As a syllabogram *wu* is unknown in Linear B and Linear A (possibly because the phonotactics prevented the occurrence of a syllable /wu/) and the C*e* and C*o* series are in several cases defective, possibly the Linear A w series was limited to *wa* and *wi*. This might explain the limited evidence for the continuation of the series in Cypro-Minoan. Even so, LA *wa* > CM 95 and LA 40/*wi*[??] > CM 74 do not seem to have inspired any Cypro-Greek syllabograms, and this points to some kind of structural disruption.

What, then, was the origin of the *w* signs used in Cypro-Greek? CGk *we* (𐠴) is a direct match for CM 01 (𐄁), but has no obvious antecedents in Linear A (Table 3.99).

Table 3.99: Comparison between CM 01 and CGk *we*.

CM 01			**CGk *we***	
				
KALA Arou 001.11	ENKO Abou 039	→	*ICS* 254	Casabonne and Egetmeyer (2002)
				
ENKO Abou 040	MAAP Avas 003		*ICS* 178	*Rantidi* 09

CM 35 (𐄇), also with no counterpart in Linear A, could be the source of CGk *wi* (𐠳), but the correspondence, albeit more acceptable than the comparison with CGk *me*, is still very tentative (see again Table 3.95).

What provisional conclusion can be drawn? Since CGk *wa* and *wi* are distinct from the *wa* and *wi* inherited from Linear A, it would seem that the inventers of Cypro-Greek formed their own *w* series using signs from a Cypro-Minoan labial series distinct

from the one made up of inherited LA *w* syllabograms. Thus, we can timidly hypothesize the existence of two sets: one represented by CM 95/*wa*[??] and 74/*wi*[??], and another by CM 01/*we*$_2$[??] and, *very tentatively*, CM 35/*wi*$_2$[??]. Should this hypothesis be correct, what would be the motivation for such an arrangement? As discussed above (3.2.3.2.6), LA *w* probably represented a bilabial approximant /w/; the *w* of ancient Cypriot Greek was almost certainly also /w/.[699] If both the predecessor and successor of Cypro-Minoan possessed syllabic series denoting /w/, why do we not find a more stable and continued *w* series in the three scripts?

It seems as though as LA *wa* and *wi* were borrowed as CM 74 and 95 to represent a Cypriot /w/ in the earliest form of Cypro-Minoan, but by the time Cypro-Greek was created (no later than 1050-950 BCE), these signs had become obsolete or had come to transcribe a different sound, therefore becoming unavailable or inadequate models for CGk *wa* /wa/ and *wi* /wa/. In the framework of the multiple-scripts theory, we might speculate that the first Cypro-Minoan and the form that inspired Cypro-Greek were different writing systems, the latter having abandoned CM 74 and 95, but this is not the only scenario capable of justifying the developments. Equally possible is that during the lifetime of Cypro-Minoan—more than four centuries—the sounds of its language(s) underwent phonological changes that affected the value and function of certain syllabograms. This is possibly the reason that around the 11th century BCE sign CM 01, and less certainly 35 and 53/54/55 has become the optimal choices for writing Cypriot Greek /w/. It may not be an accident that CM 95/*wa*[??], used in CM 2 and at Ugarit, is not attested in the clay balls and other late "CM 1" documents. Had it become obsolete in the final period of Cypro-Minoan?

What was, then, the sound represented by the inherited CM *w*[??] series? If it was /w/ originally, what did it become? CM 74 = *wi*[??] and 95 = *wa*[??] are so far attested only in the middle and ending of Cypro-Minoan sequences.[700] I would not go as far as claiming these signs were employed for nothing other than spelling the transition from /u/ to another vowel, but they may well have denoted a phonemic /w/ that derived historically from /-uV-/ sequences, therefore being phonotactically prohibited in word-initial position. At the inception of the script, CM *w*[??] is not likely to have represented a labial fricative such as /β/ or /v/, because in this case we should expect LA p_2 to have been used for such a sound (see 3.2.3.2.1 for the indications that it represented a labial fricative, most probably /f/). Therefore, /w/ is the most likely original sound of CM 74/*wi*[??] and 95/*wa*[??]. Yet it is one the commonest fates of /w/ in human languages to be fricativized to [β] or [v]. Among ancient languages, this phenomenon is attested for some Greek dialects (e.g. Pamphylian) and Late Latin.[701] This provides a potential

[699] Cf. *DGAC*: 129-130.

[700] Only in ENKO Atab 001 is it possible that the first line begins with a word *ja*[??]-*l*/*ro*[??](-) followed by (-)*wa*[??]-**04*-*na*[??]-*sa*[??](-), but since *scriptio continua* is used this is not fully ascertained.

[701] For /w/ > /β/ in Greek, see 3.2.3.2.1.1 in this thesis. For an example from Pamphylian, cf. the personal names Ζωβαλίμας, Ζώβαλος/Ζόβαλος and Ζοβαλίων (< ∗Ζωϝ(ο)-, where the letter β is used for the fricativized approximant (Brixhe 2010: 245). For the developments in Late Latin see orthographic

solution for our puzzling development: if LA *w* = /w/ was borrowed originally to represent = /w/ in Cypro-Minoan, but by the time Cypro-Greek was created this sound had shifted to a fricative, then CM *w* might no longer have been the closest match for Greek /w/ anymore.[702]

Finally: what should we make of the thorny situation presented by CM 53/54/55? We have seen that in formal terms it is closer to CGk *wa* than CGk *ma*, albeit sharing similarities with both. Two scenarios seem plausible then: (1) CM 53/54/55 is the model for CGk *wa*, but CGk *ma* has a different source; (2) CM 53/54/55 is the model of both CGk *ma* and *wa*. The rare and late CM 109, which is identical with CGk *wa*, must play a role in the development CM 53/54/55 > CGk *wa*. As suggested, it may be a late simplified variant of CM 53/54/55. Now the development that we contemplate, LA 80/*ma* > CM 53/54/55 (> CM 109) > CGk *wa*, would imply that a sign which originally represented /m/ came to transcribe /w/. Could there be any linguistic explanation for this?

In some languages /m/ can shift to [β̃] (nasalized bilabial fricative) or [w̃] (nasalized labio-velar approximant) in certain positions.[703] If /m/ was represented with an *m* series in Cypro-Minoan and developed an allophone [w̃], then in theory CM *ma*$^{??}$ → [ma, w̃a]$^{??}$ could have been perceived as more optimal than CM *wa*$^{??}$ → [βa] or [va]$^{??}$ to represent Cypriot-Greek /wa/. The flaw in this scenario is that one would expect a wholesale borrowing of the Cypro-Minoan *m* series as Cypro-Greek *w*, if not its splitting into full Cypro-Greek *m* and *w* series. This is obviously not the case, as the example of LA *ma* > CM 53/54/55 > CGk *wa* (and *ma*?) is isolated: CGk *we* and *wi* do not relate to LA > CM *me* and *mi* signs.

Should we then consider this development part of a more extensive restructuring that saw the disruption of the Linear A *m* series in Cypro-Minoan? And what could have been the cause—necessarily linguistic—of such revolution? In this scenario we should expect LA *m* = /m/ to have been borrowed to represent some other sound in Cypro-Minoan. This would explain why later the Cypro-Greek *m* series had to be been formed with few or no Cypro-Minoan signs deriving from the Linear A *m* series. This would mean that the bilabial nasal was not a phoneme in the language of the creators of Cypro-

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confusions compiled in the *Appendix Probi* such as *brabium* for *bravium*, reflecting the merger of the fricativized /w/ > /β/ or /v/ with the allophone of /b/ in intervocalic position, also /β/ or /v/.

[702] With regard to this, see 4.2.2.3.12 for a possible (though very uncertain) case of alternation between CM 51 = *pi*$^{??}$ and 74 = *wi*$^{??}$.

[703] In Modern Irish, /m/ has lenited to [w̃] (spelled *mh*) in initial position and other contexts (Ó Siadhail 1991: 112, Table 6.1, as well as Ó Baoill 1993: 168-170, who notates the allophone as [β]); Welsh [m-] > [β̃-] > [v] and Breton [m-] > [v-] reflect similar phenomena (see Willis 1993: 127 and Press 1993: 436-437, respectively). In the ancient Elamite language (southwestern Asia), /m/ may have had an allophone close to /v/ or /w/, as suggested by three clues: (1) the use of cuneiform *m* signs to render both /m/ and /v/ in Iranian loanwords (already Paper 1955: 34-36); (2) Elamite spelling variations such as *ligawe* ~ *likame* and *suhterwe* ~ *suhterme*; and (3) the rendering of the Elamite royal name *Sime-palar-huhpak* with initial *Ší/Ši-we-* or *Še-ep-* in Akkadian (see Khačikjan 1995: 107, 1998: 8 apud Stolper 2004: 71). Other languages may feature opposite developments, whereby in certain contexts /w/ shifts to /m/ (see Hoffner and Melchert 2008: 44-45 on Hittite, and Talon 2010 on Akkadian).

Minoan. Let us explore this possibility. Languages without *phonemic* /m/ typically possess voiced bilabial stop /b/ that can be pronounced (allophonically) as [b], [m], or prenasalized [^{m}b], depending on its position. In various documented cases, the "choice" between the stop and the nasal depends on whether the following vowel is nasalized or plain: [bṼ] vs. [mV].[704] In languages with this configuration, /m/ exists as a sound, but normally it is not perceived as different from the other pronunciations by native speakers. Conversely, foreigners may identify it with the /m/ of their own language and spell it accordingly. Thus, this hypothesis would not be hampered by the fact that on Cyprus we find non-Greek personal names such as *Kuš**m**ašuša* (an Alasiyan king mentioned in a cuneiform letter[705]) or place-names like Τα**μ**ασσός. Yet there are two important obstacles. First, the few modern languages without /m/ are found mostly in America and Central Africa,[706] not Eurasia (although this may not have been so in the past). Secondly, if the language of Cypro-Minoan possessed a sound that varied between [b] and [m], then the devisers of the script would probably have used the syllabograms of the LA *m* and *p* series, or the *m* series alone, to represent it. This paradoxical conclusion casts doubt on the foregoing scenario.

As the two hypotheses we have explored face difficulties, perhaps it is advisable to maintain an account that is more economical. Perhaps we should focus on the relatively secure development of LA 80/*ma* into CM 53/54/55 (> CM 109?), and of the latter into CGk *wa* and possibly *ma*. This does show some *continuity*, and perhaps until new evidence comes to light we should assume that the apparent disorder in the *m* series is the mixed product of dramatic paleographical developments and the creation of signs for unoccupied slots in Linear A (for instance, *mo*). As a result, I will assign to the signs in question working readings consistent with the existence of a *m* series: CM 39/49 → *mu*$^{??}$, 53/54/55 + 109 → *ma*$^{??}$, 73 → *mo*$^{??}$ and 91 → *mi*$^{??}$. Table 3.100 summarizes the hypotheses ensuing from this section.

[704] Maddieson (2013b).
[705] See 5.2 in this thesis.
[706] Maddieson (2013b).

Table 3.100: Comparative evidence for hypothetical CM *m*, *w* and w_2 series.

Linear A			Cypro-Minoan			Cypro-Greek		
Sign	**Value**	**Realization**	**No.**	**Sign**	**Value**	**Sign**	**Value**	**Realization**
𐘀 𐘁	*ma*	/ma/	53/54/55 + 109	𐄀 𐄁 + 𐄂	*ma*[??]	𐠀 𐠁	*wa*	/wa/
						𐠃	*ma*	/ma/
𐘂	*me*	/me/	—	—	—	—	—	—
??	??	??	??	??	??	𐠄 𐠅	*me*	/me/
(𐘃 𐘄)	*mi*	/mi/)	91	𐄃	*mi*[??]	𐠆	*mi*	/mi/
—	—	—	73	𐄄	*mo*[??]	𐠇 𐠈	*mo*	/mo/
—	—	—	39/49	𐄅 𐄆	*mu*[??]	𐠉	*mu*	/mu/
𐘅	*wa*	/wa/	95	𐄇	*wa*[??]	—	—	—
𐘆	*wi*	/wi/	74	𐄈	*wi*[??]	—	—	—
—	—	—	01	𐄉	$we_{(2)}$[??]	𐠊	*we*	/we/
—	—	—	35	𐄊	$wi_{(2)}$[??]	𐠋	*wi*	/wi/

3.4.7 The n *series*

The existence of a series for a coronal nasal is much clearer than the bilabial nasal.

In section 3.4.9 strong evidence is supplied that CM 13 descends from LA 05/*to*[?] and inspires CGk *to*. This leaves room to interpret CM 08 as descendent from LA 06/*na* and predecessor of CGk *na*. In terms of paleography the comparison is straightforward (see Tables 3.1-3.2 and 3.101) and has long been proposed.[707]

Table 3.101: Comparison between CM 08 and CGk *na*.

CM 08			**CGk *na***	
		→		
ENKO Abou 005	ENKO Abou 010		*ICS* 318.A.I.6	*Rantidi* 27
				
ENKO Abou 046	ENKO Abou 053		*Rantidi* 51	*Kouklia* 227

[707] See e.g. Sittig (1956: 41) and Saporetti (1976: fig. 41).

The situation in the *e* row is a bit thornier: LA 24/*ne*[??] (𐊤) can be compared to CM1 02 (cf. Table 3.31 in 3.2.2.2 and Table 3.102 here), but CGk *ne* (𐏊) is analogous to CM2 56 and CM1 34 (Table 3.103).[708]

Table 3.102: Comparison between CM1/3 02 and CGk *ne*.

CM 02			**CGk *ne***	
				
PSIL Asta 001	PSIL Asta 001	→	*ICS* 258a[709]	*ICS* 327.A.6
				
RASH Atab 004.A.04	RASH Atab 004.A.04		*ICS* 307	*Kouklia* 23

Table 3.103: Comparison between CM1 34 and CM2 56, and CGk *ne*.

CM 56	**CM 34**			**CGk *ne***	
					
ENKO Atab 003.B.24	KALA Arou 001.14	ENKO Abou 025	→	*ICS* 258a[710]	*ICS* 327.A.6
					
ENKO Atab 004.B.20	ENKO Abou 027	ENKO Abou 047		*ICS* 307	*Kouklia* 23

I have mentioned in passing the possibility that the rare form CM 02 is only a variant of CM 34 and 56, which themselves appear to be allographs of a single grapheme (see 2.3.7), but this is uncertain. In any case, the comparison on each side is sound and sufficient to propose *ne*[??] as *tentative* phonetic value for CM 02 and 34/56, separately. If some cursivization is assumed, the paleographical evolution entailed by CM 02 > CGk *ne* has typological parallels. The central element of 𐏊 > 𐊤 seems to undergo the same development as Phoenician 𐤉 > Greek Ζ, whereby the writing instrument is no longer raised to inscribe three different segments, but rather executes one single but sinuous line. The coming chapters will help to determine whether CM 02 = 34/56 > CGk *ne* is a plausible scenario.

[708] Comparison proposed by Nahm (1981: 56, Abb. 3) who seems to take CM 02 and 56 as variants of the same sign.
[709] Drawing from Karageorghis (1971: fig. 86a).
[710] Drawing from Karageorghis (1971: fig. 86a).

Similar but more intricate difficulties arise when we attempt to establish comparative evidence for a CM *ni*[??] syllabogram. LA 30/*ni*[?] matches one of the signs of ENKO Atab 001 and is similar to the early instance of CM 67 in CYPR Psce 004 (see Tables 3.27 and 3.104), but CGk *ni* can only tenuously be compared with CM1 67 and CM2 65. If CM 99 and 100 are variants of CM 65 and 67 as suggested in 2.3.13 then they may play a part in the development of these signs as well.[711]

Table 3.104: Comparison between LA 30/*ni*[?], CM 65 and 67, and CGk *ni*.

LA 30/*ni*[?]			**CM 67**	**CM 65**		**CGk *ni***	
 PH 16a.2	 KH Zb 98	→	 CYPR Psce 004	 ENKO Atab 003.A.09	→	 *ICS* 352a.3	 *ICS* 217.A.10
 HT 102.2	 HT 114a.3		 ENKO Abou 046	 ENKO Abou 057		 *ICS* 189b	 *Kouklia* 1

The thwarting factor is the greater similarity of CGk *ni* to sign CM 86. As can be seen in Table 3.105, they are identical except for one detail: CM 86 features four upper oblique strokes and CGk *ni* contains only three. Conversely, the two coincide in their rightwards inclination, a characteristic that is absent from the group CM 65/67/99-100. The latter also has the advantage of facilitating a development from Linear A down to Cypro-Greek, whereas CM 86 has no obvious formal counterpart in the Minoan script.

Table 3.105: Comparison between CM 86 and CGk *ni*.

CM 86		**IDAL Avas 002**		**CGk *ni***	
KALA Arou 001.14	 KITI Abou 001  ENKO Abou 029		→	 *ICS* 352a.3	 *ICS* 217.A.10
				 *ICS* 189b	 *Kouklia* 1

[711] Nahm (1981: 56, Abb. 3) proposes the development LA 30/*ni*[?] > CM 99/100 > CGk *ni*, without providing any paleographical details.

All factors taken into account, the choice is made here to assign the hypothetical value *ni*[??] to forms CM 65, 67, 99, and 100, although the validity of the value needs to be tested separately for each form. Likewise, it is recommendable not to discard the possibility that CM 86 represent *ni*[??], although in terms of internal distribution such an interpretation seems immediately at odds with the fact that this is a very rare sign (two occurrences in the clay balls and five in the problematic cylinder KALA Arou 001).

CM 17 is only comparable to Cypro-Greek *no*.[712] Since a sign with this phonetic value is not identified in Linear A and seems to have been created independently in Linear B, there is no problem in assuming that 17 is also an innovation in Cypro-Minoan.

Table 3.106: Comparison between CM 17 and CGk *no*.

CM 17			**CGk *no***	
				
ENKO Abou 035	ENKO Aost 002.02	→	*ICS* 258	*ICS* 318.B.VII.1
				
ENKO Mins 002	CYPR Mvas 003		*ICS* 154.2	*ICS* 217.A.2

Finally, we have seen that CGk *nu* (𐊙) has no counterpart in Cypro-Minoan and appears to be a Cypro-Greek invention, probably based on the shape of CM 17 (𐄩) > CGk *no* (𐊛) (see 3.3.3 in 3.2.2.2). This implies that there was no Cypro-Minoan syllabogram that Greek Cypriots perceived as a potential model for the syllable /nu/. This problem must be related with another: sign CM0 12 in ENKO Atab 001 (𐄬) and CM2 68 (𐄫), are likely to derive from LA 55/*nu*[??] (𐘚) (see 3.2.2.2), naturally prompting us to hypothesize *nu*[??] as their value,[713] but there is no viable cognate in the other Cypro-Minoan subcorpora. Is it possible that at some point, in the later stages of Cypro-Minoan and for unknown some reason, the syllabogram *nu* was abandoned? This issue is retaken in 5.4.2.4.1.

To conclude: the existence of a more or less complete *n* series in Cypro-Minoan is hardly unexpected, as the majority of the world's languages possess a voiced coronal nasal /n/.[714]

[712] Already Sittig (1956: 41). See also Nahm (1981: 56, Abb. 3).
[713] Already Saporetti (1976: 93).
[714] 98.67% of the *UPSID* languages and 80.83% of the *PHOIBLE* phonological inventories have this sound.

3.4.8 The q *series*

Cypro-Minoan has at least one sign which is a match for one of the syllabograms of the LA *q* series, the rare CM 98, which resembles LA 16/*qa*[?] (Table 3.107).

Table 3.107: Comparison between LA 16/*qa*[?] and CM 98.

LA 16/*qa*[?]			**CM 98**
 CR(?) Zf 1	 HT 44 a.1	→	 RASH Atab 001.A.02
 KH 10.3	 PK Za 12.a		 Erimi-*Kafkalla* T.2/2[715]

The preservation of such sign in Cypro-Minoan does not need to be taken automatically as a sign of the presence of a labiovelar sound in the languages. CM 98 → *qa*[??] may have been borrowed from Linear A to spell a phonetic sequence such as /kwa/ sporadically and as an alternative to ***ku-wa*, or similar.

3.4.9 The s *and* t *series*

We have seen in previous sections (cf. particularly 3.2.3.2.1.2 and Table 3.37) that the arrangement of the signs of the coronal obstruent and sibilant series (*t*, *d* and *s*) in the Aegean and Cypro-Greek syllabaries displays unexpected inconsistencies (see Table 3.108). They can be narrowed down to two points. First: a number of signs which in Linear A belong to the *t* and *d* series, in Cypro-Greek have counterparts in a single *t* series: thus, LA *da* > CM 04 > CGk *ta*, but e.g. LA *ti* > CM 23 > CGk *ti*. Second: CGk *sa*, *se*, and *si* all have formal predecessors in Linear A with sibilant values (as well as formal counterparts in Cypro-Minoan), but CGk *su* is comparable to LA *du*[??] > CM 46/47 (see Table 3.109).[716]

[715] See Hirschfeld (2012).
[716] Comparison first proposed by Nahm (1981: 56, Abb. 3) and accepted by Valério (2008), Facchetti *et al*. (2013: 65) and B. Davis (2014: 213).

Table 3.108: Overview of the correspondences between syllabograms of the *d*, *t* and *s* series in Linear A, Linear B, Cypro-Minoan and Cypro-Greek.

Linear A		**Linear B**			**Cypro-Minoan**		**Cypro-Greek**		
𐘀	*da*	𐀀	*da*	/da/	𒀀	04	𐠀	*ta*	/ta, da, t^{h}a/
𐘁	*du*$^{??}$	𐀁	*du*	/du/	𒀁 𒀂	46 / 47	𐠁	*su*	/su/
𐘂	*ti*	𐀂	*ti*	/ti, t^{h}i/	𒀃	23	𐠂	*ti*	/ti, di, t^{h}i/
𐘃	*te*$^{?}$	𐀃	*te*	/te, t^{h}e/	𒀄	07	—	—	—
𐘄	*to*$^{?}$	𐀄	*to*	/to, t^{h}o/	𒀅 𒀆	13 / 78	𐠄 𐠅	*to*	/to, do, t^{h}o/
𐘅	*sa*$^{??}$	𐀅	*sa*	/sa/	𒀇	82	𐠇 𐠈	*sa*	/sa/
𐘆	*se*$^{?}$	𐀆	*se*	/se/	𒀈	44	𐠆	*se*	/se/
𐘇	*si*	𐀇	*si*	/si/	𒀉	27	𐠉	*si*	/si/

Table 3.109: Comparison between LA 50/*du*$^{?}$, CM 46/47, and CGk *su*.

LA 50/*du*$^{?}$			**CM 46/47**			**CGk *su***	
							
KH 11.1	ARKH 5.1	→	ENKO Arou 001.21	KITI Avas 001	→	*Rantidi* 37	*ICS* 217.B.28
							
PK Zb 12.d	HT 14.3		ENKO Atab 002.B.I.09	ENKO Abou 036		*ICS* 327.A.11	

These circumstances imply that the two Aegean coronal series conflated in Cyprus: *t*, *d* > *t*. The merger appears to have taken place already in Cypro-Minoan, as the script provides formal matches to LA *da*, *du*$^{??}$, *te*$^{?}$, *ti* and *to*$^{?}$ (and possibly *tu*$^{?}$), but not LA *de*, *di* and *ta*. Before we address the possible phonological motivations for these developments, let us first see the paleographical evidence that sustains them.

We have seen that the comparisons LA *da* > CM 04 > CGk *ta* and LA *ti* > CM 23 > CGk *ti* are consensual (Table 3.2), and that LA *te*$^{?}$ > CM 07 is unproblematic. See Tables 3.24, 3.26, and 3.29 in section 3.2.2.2 for the Linear A > Cypro-Minoan matches, and Tables 3.110-3.111 here for the Cypro-Minoan > Cypro-Greek correspondences.[717]

[717] For the comparisons LA *da* > CM 04 > CGk *ta* and LA *ti* > CM 23 > CGk *ti*, see already Daniel (1941: 254, fig. 1); for LA *te*$^{?}$ > CM 07, see Saporetti (1976: 93).

Table 3.110: Comparison between CM 04 and CGk *ta*.

CM 04		**PPAP Mins 001**	**CGk *ta***	
				
ATHI Adis 001	ENKO Mvas 002		*ICS* 257	*ICS* 258
				
KITI Iins 002.*a*	CYPR Mvas 002		*ICS* 258a[718]	*ICS* 346

Table 3.111: Comparison between CM 23 and CGk *ti*.

CM 23		**Palaepaphos-*Skales***		**CGk *ti***	
					
ENKO Avas 004	KITI Iins 001.02	PPAP Mvas 002	PPAP Mins 002	Casabonne and Egetmeyer (2002)	*ICS* 178
					
ENKO Mvas 001	CYPR Mvas 002	PPAP Pblo 002		*ICS* 346	*ICS* 212a[719]

The connection LA *to*[?] > CM 13/78 > CGk *to* (Table 3.112) is slightly less straightforward as far as the evolution from the Linear A to the Cypro-Minoan sign is concerned, but feasible.[720] As most of the time CM 08 (𐄷) is more similar to LA *to*[?] (𐄒) than to LA *na* (𐄓), Duhoux prefers it as the source of CGk *to* (𐄎, 𐄒). Yet the only sign capable of accounting for the paleographical variation and early forms of CGk *to* is CM 13/78 (𐄎, 𐄏).[721] As a result, LA *to*[?] should also be the source of CM 13. If this is the case, however, then we need to assume that the shape of LA *to*[?] (𐄒) underwent significant change in early Cypro-Minoan, perhaps as a means to differentiate it from the very similar LA *na* > CM 08 (𐄷).

[718] Drawing from Karageorghis (1971: fig. 86a).
[719] Drawing from *ICS*[2]: 419.
[720] The comparison is already found in Daniel (1941: 254, fig. 1).
[721] Valério (2013b: 127-128). Cf. already Nahm (1981: 56, Abb. 3).

Table 3.112: Comparison between LA 05/*to*[?], CM 13/78, and CGk *to*.

LA 05/*to*[?]			**CM 13/78**				**CGk *to***	
		→				→		
ARKH 2.2	KO Zf 2		KALA Arou 005.04	ENKO Abou 046	ENKO Mvas 002		*ICS* 18c	*ICS* 258
								
PK Za 16	ZA 4a.2		ENKO Atab 002.B.I.13	ENKO Avas 004	CYPR Mvas 004		Casabonne and Egetmeyer (2002)	*ICS* 178

More puzzling is the origin of CGk *te* (𐔈). We have seen that LA 04/*te*[?] (𐔇) is probably the model CM 07 (𐔇) (see Table 3.24) and thus we might expect the Cypro-Greek sign to be a continuation of it, yet this is not the case. Instead, CGk *te* seems borrowed from CM 61 (𐔉) (Table 3.113),[722] which matches LA *tu*[?] (𐔊) and only partially, both in shape and sound. A solution may be attempted by positing that CM 26 (𐔄) and 61 (𐔉, 𐔋) are the same grapheme, one that was borrowed from LA 69/*tu*[?] (𐔊, 𐔌) and provided the model for CGk *te* (𐔈) (see Table 3.113). This hypothesis is plausible even if the rare CM 26 (𐔄) does not belong here, although in this case we would have to concede a more drastic paleographical evolution (𐔊, 𐔌 > 𐔉, 𐔋).

Table 3.113: Comparison between LA 69/*tu*[?], CM 26 and 61, and CGk *te*.

LA 69/*tu*[?]			**CM 26**	**CM 61**	**IDAL Avas 002**		**CGk *te***	
		→				→		
KH 7b.3	HT 7b.1		ENKO Arou 001.07	ENKO Abou 044			*ICS* 258	Casabonne and Egetmeyer (2002)
								
TY 3a.7	ZA 8.2		ENKO Atab 003.A.17	ENKO Abou 048			*ICS* 346	*ICS* 212a[723]

[722] Saporetti (1976: 95).
[723] Drawing from *ICS*[2]: 419.

In this scenario, LA *te*[?] > CM 07/*te*[??] would have had no continuation in Cypro-Greek. We would also need to account for the change of vocalism LA *tu*[?] > CGk *te*, which seems to be the reverse case of LA *ke*[??] > CGk *ku* (see 3.4.4). Notice that, as we have seen, Cypro-Greek appears to have felt the need to create a new sign *tu* based on the form of the inherited *to*: this strongly suggests that Cypro-Minoan lacked a sign whose value was close to Greek *tu* = /tu, du, t^{h}u/. In turn, this circumstance might have something to do with the *possible* development LA *tu*[?] > CM 61 (*te*/*u*[??]) > CGk *te*. One possibility is that CM *u* represented a particular type of vowel, close to both Minoan /u/ and Cypriot Greek /e/. The possibilities for this special Bronze Age Cypriot vowel include a high back /ɯ/ (used e.g. by speakers of Turkish and Mandarin) or a mid-high central /ɘ/. Whatever the exact sound was, its pronunciation may have varied enough as to have been identified with /e/ by speakers of Greek.

What arrangement do these correspondences reflect? As Cypro-Minoan lacks equivalents for possibly as many as three LA *t* and *d* syllabograms, and because LA *du* seems to have been reassigned to a sibilant at some point (it ultimately yields CGk *su*), it is difficult to imagine that the script possessed two full coronal obstruent series.

Dealing with this problem and particularly with the development LA *da* > CGk *ta*, Steele expresses the concern that "it is difficult to imagine why a sign of a hypothetical "d" series would be reinterpreted as *ta* if there were already a sign of the "t" series (from which Cypriot Syllabic *ti* and *to* would derive …)".[724] However, a suitable parallel is seen in the adaptation of the Mesopotamian logo-syllabic script to the Hurrian language. In the orthography of the famous Mitanni Letter (14th century BCE), we find that the e.g. cuneiform syllabograms of different series were employed for the same Hurrian consonant. For example, signs of the *d* and *t* series (in Akkadian used for voiced, voiceless and emphatic coronal stops depending on variable orthographic rules[725]) were randomly reassigned to the Hurrian phoneme /T/: *ta*, *te* and *ti* were used for /Ta/, /Te/ and /Ti/, while *du* was employed for /To/ and /Tu/.[726]

Table 3.114: Cuneiform syllabary used for Hurrian in the Mitanni Letter (the phonetic values are those of the Akkadian variant).[727]

Hurrian sounds	/a/	/e/	/i/	/o/	/u/
/P/	*pa*	*be*	*bi*	*bu*	*bu*
/T/	*ta*	*te*	*ti*	*du*	*du*
/K/	*ka*	*gi*	*ki*	*ku*	*gu*

[724] Steele (2014a: 195).
[725] Kouwenberg (2011: 387).
[726] Van Soldt (2010c: 119-120).
[727] Van Soldt (2010c: 120).

The reason is that, unlike Akkadian, the Hurrian obstruents (including, of course, the stops) did not feature phonemic voicing, or the "emphatic" contrast. The distribution of voiced and voiceless variants of each consonant was determined exclusively by its position, i.e. it was allophonic (see 5.4.1.3). To continue with the example of the coronals: Hurrian had only a single coronal stop, /T/, pronounced as [t] word-initially, in intervocalic position when geminate and in contact with another consonant, except /m, n, l, r/, but as [d] word-finally, between vowels when simple and in contact with the sonorants. Thus, the original distinctions of the signs of the Mesopotamian *d* and *t* series (which varied in Akkadian) became useless in Hurrian, so they were arbitrarily specialized in the Mitanni Letter.[728]

The necessary differences being considered, Cypro-Minoan seems to feature a similarly situation with the coronal stop series, as illustrated in Table 3.115.

Table 3.115: Linear A signs for coronal stops reused in Cypro-Minoan (hypothetical $t^{??}$ series).

CM series	A	E	I	O	U
T	*da*	*te*	*ti*	*to*	*tu (du?)*

Notice that the distribution is complementary: Cypro-Minoan has a sign comparable to LA *da*, but not a counterpart of LA *ta*; LA *te*, but not *de*; LA *ti*, but not *di*. In the case of LA *to* probably there was no alternative, as a syllabogram LA *do* has ever been identified. Thus, the only exception would be the inclusion of both LA *tu* and *du*, but the latter is precisely the sign whose value in Cypro-Minoan may have been assibilated, as paleography suggests the development LA $du^{??}$ > CM 46/47 > CGk *su*. This needs to be address along with a discussion of the sibilant signs of Cypro-Minoan.

The existence of an *s* series in Cypro-Minoan, almost certainly representing a sibilant fricative, is supported by three continuities: LA 31/$sa^{??}$ > CM 82 > CGk *sa* (see Tables 3.13 and 3.116),[729] LA 09/$se^{?}$ > CM 44 > CGk *se* (Tables 3.25 and 3.117),[730] and LA 41/*si* > CM 27 > CGk *si*[731] (Table 3.118). Notice that CM 27 (𐄤) introduces a lower horizontal stroke that LA 41/*si* (𐄣, 𐄣) did not possess. This trait may have been introduced in Cypro-Minoan to help distinguishing an original CM 27/$si^{??}$ form (*𐄣) from CM 25 (𐄢).

[728] Wilhelm (2008: 84); Van Soldt (2010c: 119-120).
[729] Proposed by Saporetti (1976: fig. 41) and Nahm (1981: 56, Abb. 3).
[730] Widely accepted since Saporetti (1976: fig. 41). See Table 3.2.
[731] É. Masson (1974: 44, fig. 26) proposed the value *ši*/*e* for CM 27, but Faucounau (1977: 237, fig. 1) and Nahm (1981: 54, Abb. 2) were the first to compare it simultaneously to LA 41/*si* and CGk *si*.

Table 3.116: Comparison between CM 82 and CGk *sa*.

CM 82			**CGk *sa***	
		→		
ENKO Mvas 001	ENKO Abou 030		*Kouklia* 2	*ICS* 143
				
ENKO Abou 030	PPAP Mvas 001		*ICS* 251.3	*ICS* 352a.10

Table 3.117: Comparison between CM 44 and CGk *se*.

CM 44			**CGk *se***	
		→		
ENKO Abou 017	ENKO Abou 035		*ICS* 257	*ICS* 178
				
ENKO Abou 044	ENKO Aost 002.03		*ICS* 176a-b	*ICS* 157

Table 3.118: Comparison between LA 41/*si*, CM 27, and CGk *si*.

LA 41/*si*			**CM 27**			**CGk *si***	
		→			→		
KN Zb 5	ZA 26a.1		KOUR Psce 001	ENKO Aost 002		*ICS* 18c	*ICS* 258a[732]
							
KE Zb 4	HT Zb 159		ENKO Arou 001.04-05	ATHI Adis 001		*ICS* 178	*ICS* 212a[733]

Since the majority of the world's languages possess at least one sibilant fricative, especially in Eurasia,[734] the preservation of this series in Cypro-Minoan is hardly surprising.

[732] Drawing from Karageorghis (1971: fig. 86a).
[733] Drawing from *ICS*[2]: 419.

Much more unclear is the question whether Cypro-Minoan had a syllabogram *so* on which CGk *so* (𐘋) might have been modeled. If we considered only the paleographical aspects, CM 37 (𒋻) and 67 (𒍝) would be the fittest candidates. However, each of them could by the same token equate with other signs: we have seen that CM 37 could be related to LA 29/pu_2[??] and CGk *pu*, while CM 67 might correspond to LA 30/*ni*[?]. Importantly: it is normally assumed that Linear A lacks a predecessor of LB 12/*so* (𐂂, 𐂃), although the hapax syllabograms LA 363 (𐜫) and 364 (𐜬) might be it.[735] In any event, not even LA 363/364 equate with any known Cypro-Minoan sign. Finally, we cannot preclude the possibility that CGk *so* is an ex novo creation. To sum up, the existence of a CM *so*[??] is uncertain.

Table 3.119: Comparison between CM 67, CM 37 and CGk *so*.

CM 67		**CM 37**			**CGk *so***	
						
CYPR Psce 004	ENKO Abou 046	ENKO Abou 032	ENKO Avas 012	→	*ICS* 18c (?)	*ICS* 318.A.I.5
						
ENKO Abou 049	ENKO Abou 057	ENKO Arou 001.15	KITI Avas 001		*Kouklia* 21	*Rantidi* 52

With the general evidence for t[??] and s[??] series pored over, the first question to ask is: if Cypro-Minoan had only one coronal obstruent series, t[??], what type of sound might it have represented? In light of the above discussion, the most economical way to interpret the amalgamation of LA *d* and *t* into a single coronal series in Cypro-Minoan is that the main contrast expressed by the two Minoan consonants had no equivalent in the Cypriot language.

Davis' hypothesis (see 3.2.3.1 and 3.2.3.2.1.2) remains theoretically possible. As per him, LA *d* represented a fricative /θ/ and LA *t* denoted a stop /t/; at the same time, the Cypriots of the Bronze Age would have lacked a similar coronal fricative, so they perceived both sounds as a stop /t/. However, /θ/ would have also been identified with a sibilant /s/, whence LA *du*[??] > CM 46/47 = /su/ > CGk *su*. It should be kept in mind that Davis ponders both voiceless and voiced allophones for each sound, /θ/ and /t/. See Table 3.120.

[734] 397, or 88.03%, of the *UPSID* languages have at least one sibilant fricative.
[735] Valério, apud Younger (2010).

Table 3.120: Hypothetical development of the CM $s^{??}$ and $t^{??}$ syllabograms if LA *d* was a fricative (following the interpretation of B. Davis).[736]

Linear A			Cypro-Minoan			Cypro-Greek		
Sign	**Value**	**Realization**	**Sign**	**Value**	**Realization**	**Sign**	**Value**	**Realization**
𐘀	*da*	/θa, ða/$^{?}$	𐙐	$t^{??}$	/ta, da/	𐘀	*ta*	/ta, t^{h}a, da/
𐘁	*ti*	/ti, di, t^{h}i/$^{?}$	𐙑	$t^{??}$	/ti, di/	𐘁	*ti*	/ti, t^{h}i, di/
𐘂	*to*$^{?}$	/to, do, t^{h}o/$^{?}$	𐙒	$t^{??}$	/to, do/	𐘂, 𐘃	*to*	/ta, t^{h}o, do/
𐘄	*tu*$^{?}$	/tu, du, t^{h}u/$^{?}$	𐙓	$t^{??}$	/tɯ, dɯ/	𐘄	*te*	/te, t^{h}e, de/
𐘅	*du*$^{??}$	/θu, ðu/$^{?}$	𐙔	$s^{??}$	/su, zu/	𐘅	*su*	/su/

Conversely, if we accept the interpretation of the Linear A and B evidence given in 3.2.3.2 as pointing to LA *d* being a voiced stop, then the difference between it and LA *t* would be one of voicing. In this scenario, the language of Cypro-Minoan possessed a single coronal stop which, like Hurrian, was pronounced voiceless or voiced depending on context, meaning that signs of the two Linear A series could be used to transcribe it. For this reason, the devisers of Cypro-Minoan picked just one for each syllable that contained their coronal stop. Here, the latter is notated $t^{??}$ for simplicity, but it is worthwhile noticing that typologically it would most likely be /t/. See Table 3.121.

Table 3.121: Hypothetical development of the CM $s^{??}$ and $t^{??}$ syllabograms if LA *d* was a stop.

Linear A			Cypro-Minoan			Cypro-Greek		
Sign	**Value**	**Realization**	**Sign**	**Value**	**Realization**	**Sign**	**Value**	**Realization**
𐘀	*da*	/da/$^{?}$	𐙐	$t^{??}$	/ta/ → [ta, da]$^{?}$	𐘀	*ta*	/ta, t^{h}a, da/
𐘁	*ti*	/ti/$^{?}$	𐙑	$t^{??}$	/ti/ → [ti, di]$^{?}$	𐘁	*ti*	/ti, t^{h}i, di/
𐘂	*to*$^{?}$	/to/$^{?}$	𐙒	$t^{??}$	/to/ → [to, do]$^{?}$	𐘂, 𐘃	*to*	/ta, t^{h}o, do/
𐘄	*tu*$^{?}$	/tu /$^{?}$	𐙓	$t^{??}$	/tɯ/ → [tɯ, dɯ]$^{?}$	𐘄	*te*	/te, t^{h}e, de/
𐘅	*du*$^{??}$	/du/$^{?}$	𐙔	$s/t^{??}$	?	𐘅	*su*	/su/

The difference between the two hypotheses is that Davis' offers an account for the unexpected development of LA $du^{??}$ > CM 46/47 = /su/ > CGk *su*. This might salvage the lack of other solid evidence for a fricative pronunciation, as defended in 3.2.3.2.1.2. The scenario in which LA *d* is viewed as a stop, otherwise more

[736] Following B. Davis (2014: 73, Tab. 72), but adapted to the comparisons between Linear A, Cypro-Minoan and Cypro-Greek signs as expounded in this section. In accordance to what was mentioned before, I use /ɯ/ to refer to a hypothetical vowel in the language of Cypro-Minoan that could have been represented with Linear A *u* signs and nevertheless inspire Cypro-Greek *e* syllabograms.

economical, would need to be accompanied by a different away of interpreting the evolution of the sign.

I would like to suggest that LA *du*[??] may have had a special fate in Cyprus because in the language of Cypro-Minoan /t/ was assibilated before /u/. Languages like Japanese and Gilbertese (an Austronesian language from Kiribati) are cases in point. Before /u/, Gilbertese *assibilates* /t/ to [s] or to an "alveolar-palatal affricate" depending on the dialect.[737] In Late Middle Japanese /t/ and /d/ became affricated before /u/ and thus in Modern Japanese they are pronounced as [ʦ] and [ʣ] in this position.[738] A similar development might justify the evolution of LA *du*[??] = /du/ to a sign with a sibilant value. The only obstacle is that the assibilation of coronal stops before /u/ is normally accompanied by the same development before /i/: e.g. Japanese features /ti/ > [ʧi] and /di/ > [ʤi].[739] This tendency clashes with the widespread use of CM 23 *ti*[??] (< LA *ti*) and its recycling as CGk *ti*, which would be unexpected if the coronal stop was no longer articulated as such before /i/.

Problematic as this alternative is, I would stress that our ability to evaluate which of the two hypotheses—LA d as a fricative or as a stop—is more economic is hampered by the limited evidence offered by Cypro-Minoan and its undeciphered status. Still, I would cite again the *typological* parallel of modern-day Japanese as a reminder that the assibilation of a coronal stop before specific vowels may unbalance the sound inventory of a language by affecting the phonemic contrasts between *coronal stops* and *affricate and fricative sibilants*. In Japanese the syllables [ti] and [tu] are no longer phonemic: the assibilation of [ti] into [ʧi] led to the neutralization of the contrast of /t/ and /ʧ/ before /i/, whereas the shift of [ti] into [ʦu] actually introduced a sound entirely new to the language, [ʦ] (see Table 3.122).

Table 3.122: Distribution of phonemic voiceless coronal stops and affricates in conservative Modern Japanese.[740]

Phoneme	**Spoken allophones by syllable**				
/t/	[ta]	[te]		[to]	[ʦu]
/ʧ/	[ʧa]		[ʧi]	[ʧo]	[ʧu]

On the other hand, the constant influx of new loanwords, especially from European languages that possess affricates like English, German and Italian has made possible new syllables and new phonemic contrasts in Japanese. Notice that [ti] has been reintroduced, while numerous loanwords rendered with [ʦ] have made the latter sound phonemic (Table 3.123).

[737] Harrison (1994: 329).
[738] Irwin and Narrog (2012: 249). Labrune (2012: 62-63)
[739] *Ibid*.
[740] Adapted from Pintér (2015: 150).

Table 3.123: Distribution of phonemic voiceless coronal stops and affricates in "innovative" Modern Japanese (new phonemes in bold).[741]

Phoneme	**Spoken allophones by syllable**				
/t/	[ta]	[te]	**[ti]**	[to]	
/ʧ/	[ʧa]	**[ʧe]**	[ʧi]	[ʧo]	[ʧu]
/ʦ/	**[ʦa]**	**[ʦe]**		**[ʦo]**	[ʦu]

Japanese is a good example of the consequences that positional assibilation of a coronal stop might have had in Cypro-Minoan and not just because it shows diachronic changes in the balance of the sound system. As the language is written with two open-syllable syllabaries, *Hiragana* and *Katakana*, these developments have forced the introduction of innovative sign combinations to represent the new syllables.[742] Similarly, Cypro-Minoan might have gone through considerable structural modifications.

To sum up, the involvement of an assibilation /tu/ → [ʦu] in the development LA *du*$^{??}$ > CM 46/47 > CGk *su* could only be fully considered if we had extensive evidence for the coronal stop and affricate series of Cypro-Minoan. Unfortunately, we have seen in 3.4.4 that there is too much uncertainty surrounding the possible *z*$^{??}$ and *z*$_2$$^{??}$ series, including the fate of LA 79/*zu*$^{??}$ (𐘯) > CM0 17 (𐘗). In fact, the hypothesis leads to important questions. Why is it that, beyond "CM 0", there is no successor of LA *zu*$^{??}$ in Cypro-Minoan. Assuming LA *du*$^{??}$ > CM 46/47 was borrowed to represent /ʦu/ because the language of Cypro-Minoan lacked phonemic voicing in the obstruents and disavowed /t/ before /u/, as we have been pondering in this section): was LA > CM *zu*$^{??}$ (apparently used in ENKO Atab 001) eventually discarded from Cypro-Minoan because it transcribed the same syllable as LA *du*$^{??}$, thus becoming redundant? If this is so, why is it that LA *su*$^{??}$ (𐘮) does not appear to have been borrowed? Was it present in early Cypro-Minoan and does not show because of accidents of preservation? And why is that this presumable CM 46/47 → /ʦu/(??) was not re-used as *zu* in Cypro-Greek? Although it remains unattested, a syllabogram *zu* must have existed in Cypro-Greek because there was certainly a need to write Greek words like ζυγόν 'yoke', yet we know that CGk *su* (𐘾) was not it. Suggesting that CM 46/47 came to represent /su/ or a similar fricative sibilant already in Cypro-Minoan solves the latter problem and, as a solution, it could be entertained that the syllabary's *u* column, namely as regards the *tu*$^{??}$, *zu*$^{??}$, *su*$^{??}$ Saw gradual adjustments throughout the Late Bronze Age. Table 3.124 illustrates a set of hypothetical developments that might account for all facts and unknowns.

[741] Adapted from Pintér (2015: 150-152).
[742] Pintér (2015: 150-152).

Table 3.124. Hypothetical development by stages of the Cypro-Minoan syllabograms for coronal stops and sibilants with *u*-vocalism.[743]

Linear A	**Cypro-Minoan (Hyp. stage 1)**	**Cypro-Minoan (Hyp. stage 2)**	**Cypro-Minoan (Hyp. stage 3)**	**Cypro-Greek**
tu /tu/	*tu* /tu/	*tu* /tɯ/	tɯ /tɯ/	*te* /te, de, the/
zu /tsu/	~~*zu* /tsu/~~	*du* /tsɯ/ > /sɯ/	*du* /sɯ/	*su* /su/
du /du/	*du* /tsu/			
su /su/	*su* /su/	~~*su* /sɯ/~~		

At the same time, notice that LA *ti* > CM 23/*ti* may have been maintained with its occlusive value. Even if the language of Cypro-Minoan historically assibilated /ti/ to [ʧi] or [tsi] (which, as mentioned above would, be expected if /t/ assibilated before /u/), a secondary [ti] might have been reintroduced from several sources, including loanwords (like Japanese) or internal phonological developments (like Hittite).

It is abundantly clear that no *definitive* solution for Cypro-Minoan hypothetical $t^{??}$ and $s^{??}$ series lies at hand for now, and that all of the above is the product of an attempt to put together the set of hypotheses capable of accounting for the paleographical correspondences between Linear A, Cypro-Minoan and Cypro-Greek signs in the most economical and elucidative way. This being so, it is only tentative and for the purposes of the coming analytical procedures that I assign to CM 46/47 the value *s*/*tu*$^{??}$.

3.4.10 Untransliterated syllabograms

Because not all Linear A and B syllabograms have been successfully transliterated, there are a small number of Cypro-Minoan signs with counterparts in undeciphered Minoan signs.

As the first case we have already mentioned CM 41, which in addition to LA 50/*pu*$^{??}$ Is comparable to the untransliterated LA 49 (see Table 3.85 in section 3.4.6).

The second is CM 40, a rare sign so far restricted to Ugarit and whose best comparandum in the Aegean is LA 47 (Table 3.125). This sign remains untransliterated, but it is worthwhile mentioning in passing that Doria suggested long ago that the value of its LB counterpart (,) was i_2, phonologically [ji], and the same view is pondered by Melena.[744]

[743] See fn. 736 for /ɯ/ as the representation of a hypothetical vowel of the language of Cypro-Minoan that could have been represented with Linear A C*u* signs but borrowed as C*e* in Cypro-Greek.
[744] Doria (1972) apud Melena (2000: 22).

Table 3.125: Comparison between LA 47 and CM 40.

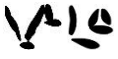
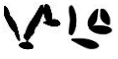
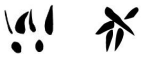
LA 47		**CM 40**
 MA 1.a  ARKH 4b.3  KN Zf 31	→	 RASH Atab 001.B.03  RASH Atab 004.A.04

Unfortunately, none of these signs have counterparts in the Cypro-Greek syllabary. If any phonetic value is to be proposed, it must be through other types of evidence (see section 5.4.2.4.3).

3.4.11 Results

The hypothetical sign values suggested by comparative are systematized in Table 3.126.

Table 3.126: Hypothetical values of Cypro-Minoan syllabograms suggested by comparative analysis.

	A	**E**	**I**	**O**	**U**
	 102/101[??]	 38[??]	 104[??]	 64[??]	 19/79[??]
J	 69/72[??]			 88-90[??]	 88-90[??]
K	 25[??]	 110[??] 112[??]	 70[??]	 21/15[??]	 110[??]
L	 87[??]	 24[??]	 09[??]	 05[??]	 28[??]
M	 53-55[??] 109[??]	 35[??]	 91[??]	 73[??]	 39/49[??]
N	 08[??]	 02[??] 34/56[??]	 65/67/99-100[??]	 17[??]	 68[??]
P	 06[??]	 11[??]	 50/51[??]	12[??]	 37[??] 41[??] 61[??]
R	 75[??]	 33[??]		 97[??]	
S	 82[??]	 44[??]	 27[??]	 37[??]	 46/47[??]
T	 04[??]	 07[??] 61[??]	 23[??]	 13/78[??]	 46/47[??] 61[??]
W	 95[??]		 74[??]		
W_2		 01[??]	 35[??]		
Z		 112[??]			 (CM0 17[??])
Z_2	 107[??]			 59[??]	
PA_2	 72b[??]	**PU_2**	 37[??]	**QA**	 98[??]

Chapter 4

INTERNAL ANALYSIS

4.1 THE METHOD

The goal of this chapter is to analyze Cypro-Minoan signs *internally*, by which I mean following a set of approaches to their values that are *independent* from external elements, namely comparisons with related scripts. These approaches are of three kinds: statistical analysis of the frequency and positional distribution of signs (in 4.2.1 and supplementarily in 4.2.2); a survey of traces of morphological activity (and spelling variants) as seen in the alternations and interactions between different syllabograms, which betray, on an abstract level, phonetic connections between them (in 4.2.2); and corrections or scribal mistakes (4.2.3).

The prospective benefits of using internal approaches with a script that has known deciphered relatives, but whose underlying language (or languages) is obscure is illustrated by the case of Linear B. Although the decipherment of the Mycenaean logo-syllabary was ultimately consummated because the underlying language was a Greek dialect and the inscriptions contained personal and place names known from later sources, it was achieved mainly due to internal analyses (after the signary had been sufficiently understood), as will become clear in 4.2.2.1. The strength of these methods resides in their independence from the external ones, since they indicate relations between signs *on their own*, without any assignation of phonetic values. Still, in this chapter the results of each analytical procedure will be *contrasted* with the hypothetical sign values proposed in Chapter 3. Whenever a similar or identical phonetic value is suggested independently by the two methods, it will be considered more likely and a question mark removed.

4.2 ANALYSIS

4.2.1 The identification of V signs

All accounts of how the decipherment of Linear B came about agree that one of the first breakthroughs was the correct identification of the syllabograms LB 08/*a* () and 61/*o* () as "pure vowels", which Ventris deduced from their "great initial frequency".[745] As Chadwick explained in his later account of the decipherment, in a syllabary that possesses signs only for vowels (V) and consonants plus vowels (CV), "a vowel sign will only be used in the middle of a word if it immediately follows another vowel; but

[745] See e.g. Chadwick (1970: 51-52) and Pope (1999: 168, 171, 174).

all words beginning with a vowel must start with a vowel sign."[746] At the time, this principle was known from the experiences in deciphering other systems that represented open syllables, namely Cypro-Greek and the Anatolian Hieroglyphic script.[747]

With the undeciphered Aegean scripts, it seems that scholars take this as a typological tendency of syllabaries that operates wholly independently from the language they transcribe.[748] Yet Chadwick himself underlined exceptions to the rule: in Cypro-Greek, *a* and *e* show a great sequence-initial frequency, but *i*, *o* and *u* often appear sequence-medially and finally because the ancient Cypriot Greek dialect employed these vowels next to other vowels and in diphthongs.[749] Likewise, Linear B *u* is mostly employed in medial and final position, given its use as the second element of diphthongs.[750] This raises the question: how universal is the principle and to what extent can it be applied to other syllabaries that transcribe languages of very distinct, even unknown nature? The answer depends on what linguistic features underlie the described principle and how generalized they are. Chadwick's account implies tacitly that most or all human languages possess word-initial vowels, and that vocalic phonemes are by rule more frequent than consonants in this position. This notion must be slightly mitigated as languages lacking word-initial vowels do exist. Documented examples include Tundra Nenets (a Samoyedic tongue spoken in Arctic Russia and northwestern Siberia)[751] as well as some Niger-Congo and Afro-Asiatic languages.[752] Although I did not find a way to quantify realistically their number, the very fact that they exist warrants some caution in the use of the generalization.

The great initial frequency of LB 08 was what first suggested to Ventris it must denote the vowel *a*.[753] However, as other signs of the script are also recurrent in the same position, it can be surmised that the sign stood out because it had the *greatest* initial frequency. It seems that Ventris relied on the idea that the vowel [a] is by nature the most frequent vowel of any given language. Although it is true that [a] in particular, and *low unrounded vowels* in general, are very frequent sounds of human languages,[754] it is not easy to confirm they are the most frequent of the phonemes *within the sound inventory of any language*. Thus, once more caution would seem to be in order.

As seen in the previous chapter, attempted identifications of V signs in Cypro-Minoan have mostly been proposed based on paleographical comparisons with the V

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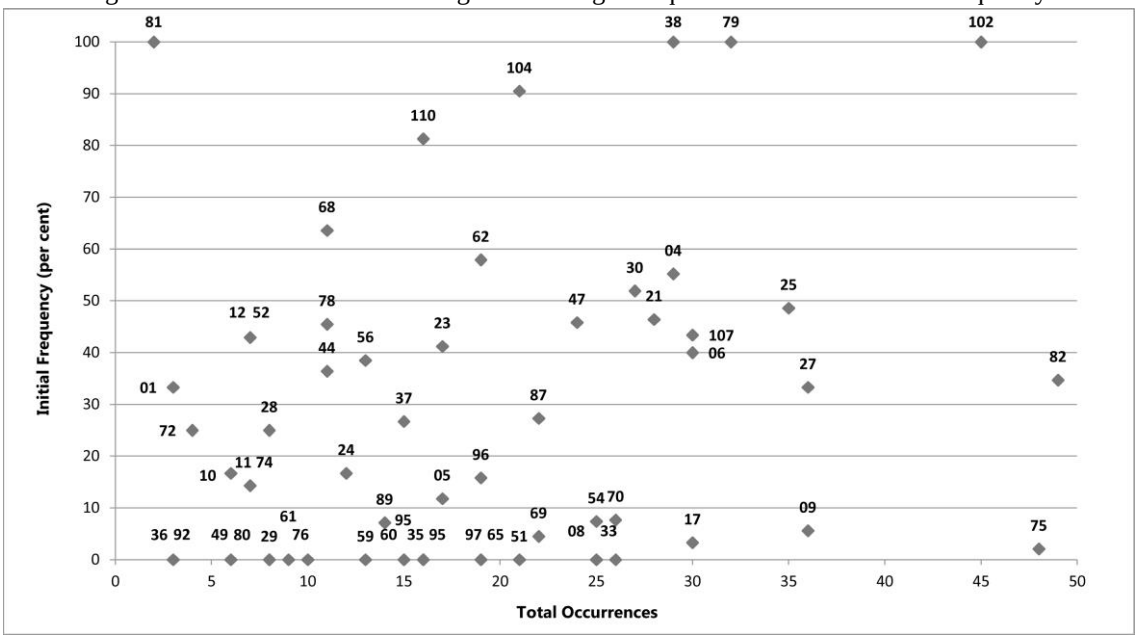
[746] Chadwick (1970: 52).
[747] For the latter see Pope (1999: 144).
[748] See e.g. Duhoux (1989: 66), citing Packard (1974: 80-81).
[749] Chadwick (1970: 53)
[750] Duhoux (1989: 66).
[751] Ackerman and Salminen (2006: 578).
[752] Welmers (1973: 39).
[753] Chadwick (1970: 62) and Pope (1999: 174).
[754] 439 of the 451 (97.3%) languages in the *UPSID* database possess some type of low unrounded vowel, (such as [a], [ɶ], [ä], [ɒ̈], [ɑ] or [ɒ], among others). Specifically, [a] is used by 86.92% of the *UPSID* languages, although it ranks second after the most frequency sound in the database, which is [i] (87.1% of *UPSID*). Finally: the ubiquitousness of [i], [a] and [u] in human languages is explained by linguists. The smallest vocalic inventories

syllabograms of the other Aegean-Cypriot syllabaries. However, the large sample of CM 2 allows us to analyze the distribution of Cypro-Minoan signs independently from their form. We can therefore test the validity of the identifications of V syllabograms in Chapter 3: CM 19/79 → $u^{??}$, CM 38 → $e^{??}$, CM 102 → $a^{??}$ and CM 104 → $i^{??}$. Crucially, CM 64 → $o^{??}$ is not attested in this subcorpus, even though the Cypro-Greek, Linear B and (with far less certainty) Linear A suggest that typologically Cypro-Minoan should have a five-vowel grid. There are proposals concerning the identification of a variant of in CM 2: Olivier claims this is CM 65, whereas in this thesis I have proposed, very tentatively, CM 62 (see section 2.3.13). Here we have the opportunity to test the validity of these diverging hypotheses. To accomplish this distributional analysis of CM 2, an experiment has been undertaken. All of the signs of CM 2 have been examined according to the two parameters that, by consensus, are associated with the expected behavior of V signs in syllabaries of open syllables: (1) overall frequency (i.e. total number of occurrences) and (2) sequence-initial frequency.[755] A dispersion graph in which CM 2 signs appear distributed according to these two factors was then generated and is supplied in Figure 4.1.

Figure 4.1: Distribution of CM 2 signs according to sequence-initial and overall frequency.



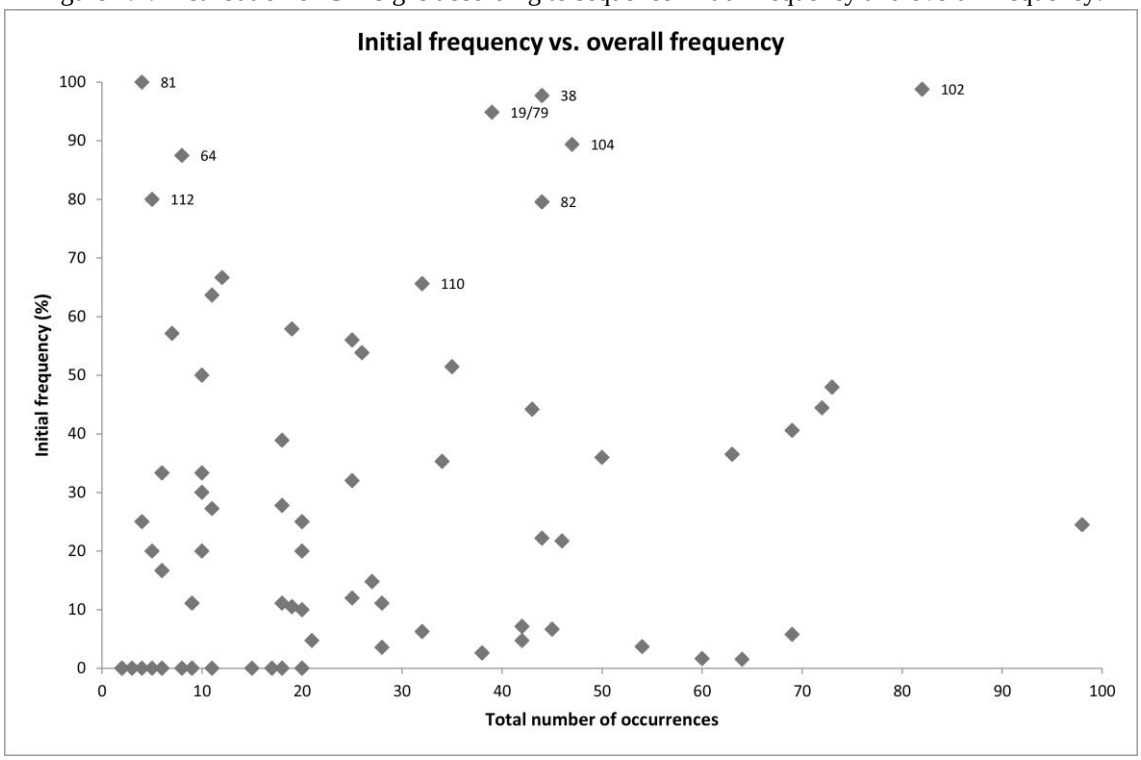
As expected, CM 38, 79, 102 and 104, appear clustered in the upper central-right area of the graph because they are *very frequent*, and *mostly or always sequence-initial*. Specifically, CM 38, 79 and 102 are always sequence-initial and, at the same time, belong in a group of sixteen CM 2 signs that occur more than 25 times. CM 104 is neither, but it is initial 90% of the time and relatively frequent (21 attestations). The

[755] For this second parameter, only the occurrences in which the position of the sign within the sequence could be determined safely were counted. Moreover, instances in repeated sequences were counted only once.

sign that appears closest to this cluster is neither CM 62 nor 65, but CM 110, with sixteen secure instances but 81.3% of word-initial sequences. This result is somewhat unexpected, but if the value of CM 110 is *ke*/*u*[??] as hypothesized in Chapter 3, then we should compare this with the data for CM 25/*ka*[??] (35 occurrences, 48.6% initial) and CM 21/*ko*[??] (26 occurrences, 42.3% initial). Perhaps the consonant represented by k?? in Cypro-Minoan was very frequent and, for some (morphological?) reason, prone to appear at the beginning of words. However, the second sign closest to the "monovocalic" cluster is CM 62 (closely followed by CM 04/*ta*[??]), with 11 initial occurrences out of 20 (55%). This lends some support to the idea that CM 62 is the counterpart of 64 in CM 2. At the same time, CM 65, which for Olivier is the true allograph of CM 64, behaves not only differently, but *antagonistically*: the sign is always sequence-final and is attested only nineteen times. In conclusion, the distribution CM 62 =[(?)] CM 64 → *o*[??] is very similar to that of the presumable V syllabograms whereas CM 65 → *ni*[??] performs like a CV sign.

This examination will not be complete if we do not apply the same procedure to the whole of Cypro-Minoan at once. Notice that, again, the assimilation of CM 19 to 79 → *u*[??] will be considered, but not that of CM 62 and 64. The resulting graph is shown in Figure 4.2.

Figure 4.2: Distribution of CM signs according to sequence-initial frequency and overall frequency.



As we might expect, the analysis confirms CM 19/79, 38, 102 and 104 as V syllabograms, which again appear concentrated on the upper center-right area of the graph. On the other hand, the result suggests three possibilities for the possible fifth

mono-vocalic sign: CM1 64, 82 and 110. Of course, if we consider this distribution alongside the comparative evidence, CM1 64 → *o*[??] has the advantage over CM 82 → *sa*[??] and CM 110 → *ke*/*u*[??].

To complete the relevant data, I supply the positional frequency of CM 19/79, 38, 64, 102 and 104 individually in Tables 4.1 through 4.5.

Table 4.1: Positional distribution of sign CM 19/79/*u*[??].

	Initial	**Medial**	**Final**	**Total**
CM 1	2 (50%)	1 (25%)	1 (25%)	4
CM 2	31 (100%)	0 (0%)	0 (0%)	31
CM 3	4 (100%)	0 (0%)	0 (0%)	4
Addenda	—	—	—	—
CM	37 (≈94.9%)	1 (≈2.6%)	1 (≈2.6%)	39

Table 4.2: Positional distribution of sign CM 38/*e*[??].

	Initial	**Medial**	**Final**	**Total**
CM 1	10 (90.9%)	0 (0%)	1 (9.1%)	11
CM 2	29 (100%)	0 (0%)	0 (0%)	29
CM 3	4 (100.00%)	0 (0%)	0 (0%)	4
Addenda	—	—	—	—
CM	43 (97.7%)	0 (0%)	1 (2.3%)	44

Table 4.3: Positional distribution of sign CM 64/*o*[??].

	Initial	**Medial**	**Final**	**Total**
CM 1	6 (85.7%)	1 (14.3%)	0 (0%)	7
CM 2	—	—	—	—
CM 3	—	—	—	—
Addenda	1 (100%)	0 (0%)	0 (0%)	1
CM	7 (87.5%)	1 (12.5%)	0 (0%)	8

Table 4.4: Positional distribution of sign CM 102/*a*[??].

	Initial	Medial	Final	Total
CM 1	25 (96.2%)	1 (3.8%)	0 (0%)	26
CM 2	45 (100%)	0 (0%)	0 (0%)	45
CM 3	11 (100%)	0 (0%)	0 (0%)	11
Addenda	—	—	—	—
CM	81 (98.8%)	1 (1.2%)	0 (0%)	82

Table 4.5: Positional distribution of sign CM 104/*i*[??].

	Initial	Medial	Final	Total
CM 1	14 (82.4%)	3 (17.6%)	0 (0%)	17
CM 2	19 (95%)	1 (5%)	0 (0%)	20
CM 3	9 (100%)	0 (0%)	0 (0%)	9
Addenda	0 (0%)	0 (0%)	1 (100%)	1
CM	42 (89.4%)	4 (8.5%)	1 (2.1%)	47

A comparison between the distribution of the probable vowel signs of Cypro-Minoan with those of Linear B and Linear A gives an interesting extra insight. In general, the Cypro-Minoan signs are even more constrained to the initial position: none of the five appears initially in less than 87.5% of the occurrences. This is not the case with the Aegean syllabaries. As mentioned above, the need to write diphthongs in Mycenaean Greek dictates that some of its vowel signs are more distributed: thus LB *u* appears initially only 14.5% of the time and *i* only 42.2%. In Linear A, the distribution of *e*, *o* and *u* is also less concentrated, possibly also for linguistic reasons. For the purposes of this dissertation what needs to be underlined is that the statistics provide a great deal of support for interpreting CM 19/79, 38, 64, 102 and 104 as vowel signs. But I would also notice in passing that a by-product of this analysis is the realization that the probable V syllabograms were seldom used in medial and final position, which might suggest that the language(s) behind Cypro-Minoan was/were poor in diphthongs.

In conclusion, the internal evidence is consistent with the hypothetical values suggested by comparative analysis of the signs in question. With a view to Chapter 5, I eliminate one question mark from each of these five hypothetical readings CM 19/79 → *u*[?], 38 → *e*[?], 64 → *o*[?], 102 → *a*[?] and 104 → *i*[?].

Table 4.6: Frequency of vowel signs in Linear B and their probable Linear A and Cypro-Minoan counterparts (discrepant distributions are marked in grey).[756]

	Signs	Initial	Medial	Final
LA	08/*a*[?]	89.74%	5.12%	5.12%
CM	102/*a*[??]	98.8%	1.2%	0%
LB	*a*	93.50%	2.81%	3.67%
LA	38/*e*[?]	64%	8%	28%
CM	38/*e*[??]	97.7%	0%	2.3%
LB	*e*	77.67%	11.25%	11.07%
LA	28/*i*[?]	55.06%	31.01%	13.92%
CM	104/*i*[??]	89.4%	8.5%	2.1%
LB	*i*	42.21%	28.44%	29.34%
LA	61/*o*[?]	85.18%	7.40%	7.40%
CM	64/*o*[??]	87.5%	12.5%	0%
LB	*o*	55.47%	7.86%	36.66%
LA	10/*u*[?]	56.36%	25.45%	18.18%
CM	19/79/*u*[??]	94.9%	2.6%	2.6%
LB	*u*	14.54%	37.19%	48.26%

4.2.2 Inflectional activity and phonetic relations between signs

> *...the discovery of phonetic relationships among the signs, namely that some pairs share the same consonant, that other pairs share the same vowel, is a necessary step toward decipherment.*
>
> E. L. Bennett, Jr.[757]

4.2.2.1 The Kober method: the procedure and its background

We owe to Kober the first systematic method for identifying inflectional activity in an Aegean syllabary.[758] Inflection is characteristic of many human languages—not all—and can be defined as "variation in the form of a single word … depending on the grammatical context in which it is used"; it is expressed by the addition of "affixes or by various types of internal change".[759] In the 1940s, when only Cypro-Greek was

[756] Based on Duhoux (1989: 116, fig. 8), as presented in Table 3.5 (section 3.2.1).
[757] Bennett (1989: 19).
[758] Pope (1999: 162).
[759] Trask (2007: 118).

legible, Kober directed her attention to Linear B, because, of all undeciphered Bronze Age Aegean scripts, this was the one with the most promising amount of material.

She started with the premise that "if a language has inflection, certain sounds are bound to appear over and over again in certain positions of the written words", and, with the sufficient amount of epigraphical material, this will be revealed in writing.[760] The published material from Knossos furnished Kober with about 200 very short inscriptions, containing some 700 different words. This proved to be a sample large enough to achieve correct conclusions. The inscriptions were well preserved and "homogeneous", as they were found at the same site (Knossos) and were divided in categories dealing with similar subjects. Of course, the method has its dangers. Kober pointed out that pairs of English words like *berry*/*merry* and *heavy*/*heaven* differ only slightly in their beginnings and endings, yet do not constitute real cases of variants of the same words, with different prefixes or suffixes. To surmount this difficulty, Kober established as a ground rule that inflection ought to be argued based on sign-sequences from "statements" (parts of the texts) dealing with the same "subject matter". The texts should have a common "vocabulary", i.e. similar types of words indicating a common subject. Thus, if in texts with identical subjects we find sequences "differing only slightly in spelling", then it is plausible to infer that the orthographic fluctuations owe to morphological activity.[761]

In the end, Kober was able to identify a series of traces of inflection in Linear B, perhaps the most significant being that some words presented triplets, i.e. three different "cases": a base form and two variants longer than the latter by one sign, for example:

26-67-**05**	→	***ru-ki-to***	Lyktos, a Cretan place-name
26-67-**23**-57	→	***ru-ki-ti-ja***	Luktiā, toponymic adjective (female)
26-67-**23**-36	→	***ru-ki-ti-jo***	Luktios, toponymic adjective (male)

The readings on the right show the phonetic and semantic information exposed after the decipherment, but before any readings were possible Kober had already determined that if (1) Linear B was typologically like Cypro-Greek and its signs represented consonant-vowel combinations (except for the monovocalic ones) and (2) the "stem" of this type of word ended in a certain consonant, then signs LB 05 and LB 23 above might contain the same consonant. At the same time, signs LB 57 and 36 "could easily have the same vowel".[762] Kober and Chadwick illustrated this principle with examples from a well-known inflected language, Latin.[763] For example:

[760] Kober (1945: 143).
[761] Kober (1945: 144-145).
[762] Kober (1946: 275).
[763] Kober (1945); Chadwick (1970: 55).

amic*us* (nominative)	→	*a-mi-**cu*** or *a-mi-**cu**-se*
amic*i* (genitive)	→	*a-mi-**ci***
amic*o* (accusative)	→	*a-mi-**co***

Thus, if Latin had been written with a syllabary of open syllables like Linear B and Cypro-Greek, in each of the three forms of the word *amicus* the last syllabogram would represent not just the case-ending, but also the last, unchanged consonant of the stem, *-c-*. Granted the rules required by Kober, on an abstract level the phonetic relation between *cu*, *ci* and *co* would be perceptible (if unconfirmed) even if the signs were unreadable.[764] In an open-syllable syllabary with CV syllabograms besides a few monovocalic signs, establishing this kind of abstract phonetic connections between signs allows us to build two interrelated axes: in one axis we gather those syllabograms sharing the same consonant and, in the other, those that possess the same vowel. In due course, this may allow us to build an abstract syllabic grid. As Ventris put it:

> "It is risky to guess what the consonants (or vowels) actually are: but one can predict that when at least half the signs of the syllabary have been securely fixed on the grid, it will need only a small number of inspired pieces of linguistic deduction to solve the whole 'simultaneous equation'."[765]

This was eventually the case.

For the most part, Cypro-Minoan meets the requirements of Kober's method for detecting inflection. Some groups of inscriptions, especially CM 2, are very homogeneous, relatively well preserved and contain a significant amount of text. In fact, É. Masson has long established that there are likely traces of inflection, mostly involving possible suffixes, not only in CM 2, but also in a number of CM 1 and 3 inscriptions.[766] However, Linear B presented an advantage on which we cannot count in our case: it included logograms. For example, it was because of the Linear B use of distinct logograms for men and women, and for male and female animals that gender-based classes of inflection could be detected.[767] Of course, we do not know if the language (or languages) of Cypro-Minoan differentiate(s) gender, so there is no need to take this as a major pitfall.

The analysis of inflectional activity in an undeciphered script requires a terminology that is as neutral as possible. I will use generically the terms "prefix" (anything that is added at the beginning of something) and "suffix" (anything added at the end of something), without any linguistic implications whatsoever—except where explicitly stated.

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[764] Chadwick (1970: 54-55).
[765] Ventris [1951] apud Pope 1999: 163).
[766] É. Masson (1970a: 92-94; 1974: 53, fig. 28). Most recently, see the overview in Steele (2013: 66-71).
[767] Chadwick (1970: 34, 44-45) and Pope (1999: 166-169, fig. 13).

As mentioned above, the results from this procedure will be checked against the phonetic values suggested independently by script comparison. *Prima facie* this might seem circular, but the point is to see where and how much the two methods, comparative and internal, support each other. Even in the case of Linear B, where the internal approach was decisive, comparisons with Cypro-Greek played a role. The proof is that, in a 1927 article, Cowley had already deduced that a Mycenaean clay tablet, containing what was most likely a long list of individuals, included a series of (then hypothetical) names whose ending was identical: 33 out of 64 ended in signs whose shape was identical with Cypro-Greek *lo*, *to* and *po*, respectively, so that for at least half of the items in the list the ending seemed to be *-o*.[768] After the decipherment, the values of these Linear B signs turned out to be *ro*, *to* and *po*. This is an encouraging indication that the combining of comparative and internal methods does not need to be unfruitful.

4.2.2.2 The vocalic axis

I will be dealing only with evidence for shared vocalic values of CV signs from potential inflectional phenomena. For example, I will not take into account possible cases of "empty" vowels repeating the vocalic value of adjacent syllabograms as a means of spelling clusters of the type CCV, in strings such as $C(V_1)$-CV_1 (progressive) or CV_1-$C(V_1)$ (regressive). The reason is that such cases are only perceptible once we can operate with *relatively safe* transliterations, and thus cannot be supported independently at this stage. This is something that will considered only in the analysis performed in Chapter 5 (in particular in section 5.4), after a discussion of the possible orthographic rules of Cypro-Minoan (5.3).

4.2.2.2.1 CM 08, 69 and 75

Three sign-sequences from ENKO Arou 001 end in -07-21. As they are found in the same text, and that text is at least in part structured like an enumeration (list?), there is a great chance that its words or phrases are functionally similar.

38-09-**75**-07-21 (ENKO Arou 001.11)	→ *e*[??]*-li*[??]*-r**a***[??]***-te***[??]***-ko***[??]
04-09-88-**08**-07-21(-) (ENKO Arou 001.13)	→ *ta*[??]*-li*[??]*-jo*[??]*-n**a***[??]***-te***[??]***-ko***[??](-)
19-23-**69**-07-21 (ENKO Arou 001.20-21)	→ *u*[??]*-ti*[??]*-j**a***[??]***-te***[??]***-ko***[??]

Thus, -07-21 seems like a suffixing element. However, it cannot be determined if it represents the full suffix[769] or part thereof. But if it represents only part of the suffix, could it be that the different signs placed before -07-21, namely CM 08, 69 and 75,

[768] Cowley (1927), apud Pope (1999: 157-158).
[769] As explained above, I used "suffix" in a broad sense. One cannot preclude that what underlies the signs in this or other cases is a chain of suffixes rather than a single affix.

contain the same vowel, and that this vowel is also part of it? Although this is supported by the hypothetical phonetic readings, the internal evidence alone is not decisive enough to be considered independent proof.

4.2.2.2.2 CM 09 and 47

104-92-**09**-60-59 (ENKO Atab 004.B.04, B.05) → *i*[?]-*92-***li**[??]**-*60-zo**[??]
17-**09**-60-59-75 (ENKO Atab 002.A.I.30) → *no*[??]-***li***[??]***-60-zo***[??]*-ra*[??]
23-**09**-60-59-••[(ENKO Atab 003.B.12) → *ti*[??]-***li***[??]***-60-zo***[??]*-••[
47-**47**-60-59 (ENKO Atab 004.B.07) → *s/tu*[??]*-s/tu*[??]*-****60-zo***[??]
25-54-**47**-60-59 (ENKO Atab 004.B.22) → *ka*[??]*-ma*[??]*-s/tu*[??]*-****60-zo***[??]

The first and last two sequences in this set are from ENKO Atab 004.B. They present us with a situation identical to that of the set in the previous section, that is, -60-59 could be a suffix on its own or part of a suffix which included the vowel of the preceding signs, 09 and 47. Neither possibility can be demonstrated, but it is worth noticing that two other sequences, from ENKO Atab 002.A.I and 003.B, seem to have a in common with 104-92-09-60-59 (ENKO Atab 004.B.04, B.05) the nucleus 09-60-59. This suggests that the other two sequences from ENKO Atab 004 may actually contain a different chain of suffixes. In turn, this agrees well with the tentative phonetic readings, which suggest that 09 (*li*[??]) and 47 (*s/tu*[??]) have different vowels.

4.2.2.2.3 CM 104 and 107

See discussion in 4.2.2.3.5.

4.2.2.2.4 CM 17 and 23 as part of suffixes and their interactions with other signs

Sign CM 23 presents another possible venue for investigating the vocalic component of some CV syllabograms, as it probably represents a suffix, or part thereof. This notion, widely acknowledged by scholars devoted to Cypro-Minoan, is mostly deduced from two facts: 1) it has a high frequency in sequence-final position, especially in CM 1 and 3 (Table 4.7); and 2) in some pairs of sequences it is added to the end of some self-standing suffixes (Table 4.8).

Table 4.7: Sequence-final frequency of CM 23.[770]

	CM 1	CM 2	CM 3	Addenda	Total
Total occurrences	72	17	13	4	106
Total Final	35 (48.6%)	5 (29.4%)	5 (38.5%)	1-3 (25-75%)	46-48 (43.4-45.3%)

Table 4.8: Cypro-Minoan sequences of three or more signs with the addition of -23.

Case I		Case II	
82-96-88	ENKO Abou 031 Cf. also KITI Iins 001	82-96-88-**23**	ENKO Arou 001.02, 09, 26
102-73-04-97	ENKO Abou 015, 045 and ENKO Avas 002 Cf. also ENKO Abou 021	102-73-04-97-**23**	KITI Ipla 001.*v*
110-23-59	ENKO Abou 062	110-23-59(-21-)**23**	KITI Iins 001

At the outset, this type of evidence for morphological activity presents itself as ambiguous. Without phonetic readings, it is not clear if the presumable suffix is fully represented by -23, or if it includes the vowel of the preceding sign. Thus, the suffix could be -23 or -V-23. Yet we can investigate the likelihood of the second possibility: if the suffix it was -V-23, the vowel in the CV syllabograms that precede -23 is bound to be the same and it is thus possible that some of these signs turn out to be particularly frequent before final -23. This is in fact the case, as seen in Table 4.9.

Table 4.9: Signs found before sequence-final CM 23.

	CM 1	CM 2	CM 3	Addenda	Total
97	4 (16%)	—	—	—	4 (11.1%)
13/78	3 (12%)	1 (20%)	—	—	4 (11.1%)
69	3 (12%)	1 (20%)	—	—	4 (11.1%)
12	3 (12%)	—	—	—	3 (8.3%)
88/89/90	3 (12%)	—	—	—	3 (8.3%)
17	1 (4%)	2 (40%)	—	—	3 (8.3%)
Others	9 (36%)	1 (20%)	5 (100%)	1 (100%)	16 (40.1%)
Total	25	5	5	1	36

[770] As usual, these figures are based on my personal count which took into account the corrections made to the edited inscriptions in Appendix A. Still, except for CM 3 the results are not too distinct from those of Duhoux (2009a: 62, 71-72, fn. 192, 196): CM 1: 37 final instances of -23 out of 75 occurrences of the sign (49.3%); CM 2: 8 out of 25 (32%); CM 3: 7 out of 12 (58.3%).

The data from CM 3 and the addenda inscriptions are not very helpful since these represent small subcorpora where, additionally, CM 23 is rarely final. On the contrary, six syllabograms appear more than twice before -23 in CM 1, CM 2 or both. The most common are CM 97, 13/78, and 69 (four times or 11.1% of their occurrences in the whole of Cypro-Minoan), followed by CM 12, 88/89/89 and 17 (three instances or 8.3%). If we read these signs with the hypothetical values suggested in Chapter 3, we see that, except for CM 69 → *ja*[??], all have a potential C*o* value: 97 → *ro*[??], 12 → *po*[??], 13/78 → *to*[??], 88/89/89 → *jo*/*u*[??] and 17 → *no*[??]. As regards the exceptional CM 69 → *ja*[??], we will see in 4.2.2.4.1 that it is part of a possible different suffix -69-23 in ENKO Arou 001 and ATHI Avas 001, which would explain its visibility here.

Another significant fact is that these five signs have relatively high frequencies in sequence-final position (17.7 to 66.2%), especially CM 17 (63.2%) and 97 (66.2%) (Table 4.10).

Table 4.10: Sequence-final frequency of CM 12, 13/78, 17, 88/89/90 and 97.

	CM 1	**CM 2**	**CM 3**	**Addenda**	**CM**
12	3 of 11 (27.3%)	0 of 7 (0%)	—	0-1 of 2 (0-50%)	3-4 of 17 (17.7-23.5%)
13/78	5 of 14 (35.7%)	3 of 11 (27.3%)	—	0 of 1 (0%)	8 of 21 (38.1%)
17	4 of 8 (50%)	20 of 30 (67.7%)	—	—	24 of 38 (63.2%)
88/89/90	4 of 14 (28.6%)	7 of 14 (50%)	—	—	11 of 28 (39.3%)
97	29 of 41 (79.7%)	10 of 20 (50%)	2 of 2 (100%)	2 of 2 (100%)[771]	43 of 65 (66.2%)

The prominence of CM 17 and 97 in sequence-final position appears to have a morphological cause as well. At least for CM 17 there is some evidence that it constitutes an addition. Unfortunately, the three pairs of sequences that point in this direction comprise sign-groups from different CM 2 inscriptions, but in any case it must be noticed that in the first two pairs the supposed "normal" form appears in ENKO Atab 004.B and the "suffixed" form occurs in 002.B.I:

38-12-97 (ENKO Atab 004.B.14) → ***e***[?]***-po***[??]***-ro***[??]
38-12-97-17 (ENKO Atab 002.B.I.13) → ***e***[?]***-po***[??]***-ro***[??]*-no*[??]

[771] This count excludes ENKO Apes 002 and 003 because they are one-sign marks.

38-17 (ENKO Atab 004.B.14) → ***e*[?]*-no*[??]
38-17-17 (ENKO Atab 002.B.I.03) → ***e*[?]*-no*[??]*-no*[??]

68-25-97 (ENKO Atab 004.B.10) → ***nu*[??]*-ka*[??]*-ro*[??]
68-25-97-17 (ENKO Atab 003.A.15) → ***nu*[??]*-ka*[??]*-ro*[??]*-no*[??]

It is also significant that out of the 24 times it appears at the end of a sequence, CM 17 is preceded by CM 97 → *ro*[??] six times and by CM 17 → *no*[??] itself three times (Table 4.11). This could yet be another indication that *-o*[??] is a common final vowel in forms without possible suffixes.

Table 4.11: Signs found before sequence-final CM 17.

	CM 1	**CM 2**	**CM 3**	**Addenda**	**CM**
97	**—**	6 (31.6%)	**—**	**—**	6 (30%)
17	**—**	3 (15.8%)	**—**	**—**	3 (15%)
Others	1 (100%)	10 (52.6%)	**—**	**—**	11 (55%)
Total	1	19	**—**	**—**	20

From a purely internal point of view, the overall impression is that CM 12, 13/78, 17, 88/89/90 and 97 contain the same vowel, one that tends to appear at the end of lexemes in regular forms, but in penultimate position when possible suffixes are involved. The alternative explanation is that they represent productive endings of some sort, in which case they do not necessarily contain the same vowel. However, the hypothetical values from Chapter 3 support the scenario of a shared vocalic value: CM 12 → *po*[??], 13/78 → *to*[??], 17 → *no*[??], 88/89/89 → *jo*/*u*[??] and 97 → *ro*[??]. As a consequence, we can refine the hypothetical value of CM 88/89/89 to *jo*[?].

4.2.2.2.5 CM 08 as part of a suffix

52-30-**21** (ENKO Atab 003.A.01) → ***52-*30-*k*o[??]
52-30-**21**-08 (ENKO Atab 003.B.18) → ***52-*30-*k*o[??]*-na*[??]
52-30-**62**-08 (ENKO Atab 003.A.08) → ***52-*30-*62*-*na*[??]

110-78 (ENKO Atab 003.B.15) → ***ke/u*[??]*-to*[??]
110-78-08 (ENKO Atab 003.A.11) → ***ke/u*[??]*-to*[??]*-na*[??]

These two groups of sequences indicate that CM 08 contains a suffix or part thereof, so we can apply the same method used above with CM 23 to verify if certain signs have a tendency to precede this suffix.

Table 4.12: Signs that precede CM 08.

	CM 1	CM 2	CM 3	Addenda	CM
51	—	4 (22.2%)	—	—	4 (18.2%)
21	1 (25%)	2 (11.1%)	—	—	3 (13.6%)
06	—	2 (11.1%)	—	—	2 (9.1%)
82	—	2 (11.1%)	—	—	2 (9.1%)
Others	3 (75%)	8 (44.4%)	—	—	11 (50%)
Total	4	18	—	—	22

The two signs that most interact with final CM 08 are CM 51 → *pi*[??] and 21 → *ko*[??]. However, the high frequency of CM 51 before 08 probably has to do with the use of both signs in what appears to be a suffixal chain (see 4.2.2.3.12). CM 21 has a hypothetical C*o* value, which might have been prolific sequence-finally in "basic" forms that receive CM 23 has a suffix (see the previous section), but this datum is of little value on its own.

4.2.2.3 The consonantal axis

4.2.2.3.1 CM 04, 27, 46/47 and 78

38-87-87-**04**-09-69-23 (ATHI Avas 001) → *e*[?]-*la*[??]-*la*[??]-***t****a*[??]-*li*[??]-*ja*[??]-*ti*[??]
38-87-87-**27** (ENKO Atab 002.B.I.23) → *e*[?]-*la*[??]-*la*[??]-***s****i*[??]
38-87-87-**47**-95 (ENKO Atab 002.B.I.09) → *e*[?]-*la*[??]-*la*[??]-***s****/**t****u*[??]-*wa*[??]

These three sequences might seem to insinuate that CM 04, 27 and 47 contain the same consonant. However, only the last two appear on the same document, so the connection is more likely in the case of CM 27 and 47.

We obtain ambiguous results if we contrast the possible link between the three signs with the provisional phonetic values: CM 27 → *si*[??], CM 46/47 → *t*/*su*[??], and CM 04 → *ta*[??]. If we read CM 46/47 as *su*[??], then the result is a nucleus 38-87-87-27/47- → ***e***[?]***-la***[??]***-la***[??]***-s-***[??] in ENKO Atab 002.B.I vs. ***e***[?]***-la***[??]***-la***[??]***-ta***[??]***-l****i*[??]*-ja*[??]*-ti*[??] in ATHI Avas 001. Conversely, if we read 47 as *tu*[??], the result is a nucleus 38-87-87-47- → *e*[?]*-la*[??]*-la*[??]*-t*[??] which would be consistent with *e*[?]*-la*[??]*-la*[??]*-ta*[??]*-li*[??]*-ja*[??]*-ti*[??]. This admittedly looks like a dilemma, but from a strictly linguistic point of view we should discard the possibility of a morphophonological phenomenon, namely that 38-87-87-27 → *e*[?]*-la*[??]*-la*[??]*-si*[??] and 38-87-87-47-95 → *e*[?]*-la*[??]*-la*[??]*-su*[??]*-wa*[??] originally contained the "stem" *e*[?]*-la*[??]*-la*[??]*-t-*[??], but *t* was historically assibilated to *s* before /i/ and /u/. It must also be noticed that, if 38-87-103- is a variant of 38-87-87- as pondered in the previous section,

then 38-87-103-23-69-23 → ***e***$^{?}$***-la***$^{??}$***-*103-s****i*$^{??}$*-ja*$^{??}$*-ti*$^{??}$ (ENKO Arou 001.01) could belong here as well.

Are there further examples of alternations between these signs? In ENKO Atab 002.A.I we find the dubious 102-75-04-54 (l. 30) versus 102-75-78 (l. 43), while side B of the fragment contains 102-75-27-69 (ENKO Atab 002.B.I.02). This might point to a morphophonological connection between 102-75-78 → *a*$^{??}$*-ra*$^{??}$*-to*$^{??}$ and 102-75-27 → *a*$^{??}$*-ra*$^{??}$*-si*$^{??}$*-ja*$^{??}$. Still, we have only one such example and the nucleus of the sequence is only disyllabic, so there is a chance this is all fortuitous. Likewise, ENKO Atab 003.A. has 102-75-04 (ll. 11, 14), 102-75-54 (ll. 02, 12) and 102-75-75 (l. 18), but these might not be related, or their common "stem" might correspond only to 102-75-.

4.2.2.3.2 CM 05, 09 and 28

79-09-**11**-75 (ENKO Atab 002.A.I.27) → ***u***$^{?}$***-li***$^{??}$*-pe*$^{??}$*-ra*$^{??}$
79-09-**44**-70 (ENKO Atab 002.B.I.14) → ***u***$^{?}$***-li***$^{??}$*-se*$^{??}$*-ki*$^{??}$

This set suggests a nucleus that can be 79-09- or be made up of 79-09- plus the consonant of CM 11 and 44. This is not much to go by, and the fact is that the tentative values of the signs (CM 11 → *pe*$^{??}$ And 44 → *se*$^{??}$) contradict the idea of a phonetic link. However, in the case that the nucleus is restricted to 79-09-, it is interesting to compare the following sequences, taking into account their hypothetical readings:

79-**09**-11-75 (ENKO Atab 002.A.I.27) → ***u***$^{?}$***-li***$^{??}$*-**p**e*$^{??}$*-ra*$^{??}$
79-**09**-44-70 (ENKO Atab 002.B.I.14) → ***u***$^{?}$***-li***$^{??}$*-se*$^{??}$*-ki*$^{??}$
79-**05**-61-95 (ENKO Atab 002.A.I.43) → ***u***$^{?}$***-lo***$^{??}$*-te/**p**u*$(_2)^{??}$*-wa*$^{??}$
79-**28**-51 (ENKO Atab 002.B.I.11) → ***u***$^{?}$***-lu***$^{??}$*-**p**i*$^{??}$

The tentative phonetic values yield four sequences containing a nucleus or prefix *u*$^{?}$*-l-*$^{??}$, and it would even be possible that three of them have an element (or chain of elements) *u*$^{?}$*-l*V*-p-*$^{??}$. The problem is that this is a circular argument because such connections cannot be demonstrated independently.

Although they come from different texts of distinct subcorpora, it is worthwhile mentioning in passing 87-51-09-82 → ***la***$^{??}$***-pi***$^{??}$*-li*$^{??}$*-sa*$^{??}$ from ENKO Atab 003.A.12 and 87-50-05 → ***la***$^{??}$***-pi***$^{??}$*-lo*$^{??}$ from the recently-published clay ball TIRY Avas 002 as another potential (if only unprovable) case of alternation between CM 05 and 97.

In any event, in order to sustain the link between CM 05, 09 and 28 one would have to find examples where they alternated.

4.2.2.3.3 CM 05 and 96

30-21-**05**-75-65 (ENKO Atab 003.A.04) → *30-*ko*[??]-*lo*[??]-*ra*[??]-*ni*[??]
30-21-**96**-••[(ENKO Atab 003.A.06) → *30-*ko*[??]-*ri*[??]-••[

As with similar cases, this pair could contain a nucleus either restricted to 30-21- or including the consonant of the following signs, CM 05 and 96. The latter hypothesis is not supported by the phonetic readings or by further examples of alternation between CM 05 and 96.

4.2.2.3.4 CM 09 and 87

38-**87**-87-04-09-69-23 (ATHI Avas 001) → ***e***[?]-***l****a*[??]-*la*[??]-*ta*[??]-*li*[??]-*ja*[??]-*ti*[??]
38-**87**-103-23-69-23 (ENKO Arou 001.01) → ***e***[?]-***l****a*[??]-*103-*ti*[??]-*ja*[??]-*ti*[??]
38-**09**-75-07-21 (ENKO Arou 001.11) → ***e***[?]-***l****i*[??]-*ra*[??]-*te*[??]-*ko*[??]

We have seen evidence for 38-87- or 38-87-87/103- as a nucleus or a prefix, but it is also possible that what we have here is a chain of prefixes, if in ENKO Arou 001 the sequence 38-09-75-07-21 shares its beginning with 38-87-103-23-69-23. This could involve a prefix where 87 and 05 interchange because they contain the same consonant, and in this case the tentative reading is supportive: *e*[?]-*l*-[??]. However, this possibility has no independent support.

4.2.2.3.5 CM 24 and 87

104-11-24-06-12-23 (ENKO Arou 001.06) → *i*[?]-***pe***[??]-***le***[??]-*pa*[??]-*po*[??]-*ti*[??]
107-11-24-107-27-69-23 (ENKO Arou 001.12-13) → *za*[?]-***pe***[??]-***le***[??]-*za*[??]-*si*[??]-*ja*[??]-*ti*[??]

This pair of sequences from ENKO Arou 001 shares a nucleus -11-24-[772] which opens different possibilities: 1) the preceding 104 and 107 contain the same vowel; 2) the following 06 and 107 share the same consonant; 3) a combination of both. In this case, the phonetic values from Chapter 3 do not strengthen any of these scenarios.

However, the interchanging 104 and 107 before -11-24- are curiously repeated in CM 2 text ENKO Atab 002.B.I:[773]

]**104**-11-**24** (ENKO Atab 002.B.I.01) →]*i*[?]-***pe***[??]-***l****e*[??]
107-11-**87** (ENKO Atab 002.A.I.29; 002.B.I.10; 003.B.18) → *za*[?]-***pe***[??]-***l****a*[??]

[772] Egetmeyer (2013a: 111) has already noticed this pair, though he provides different phonetic readings.
[773] *Ibid*.

The difference is that in the second sequence we have 107-11-87 with 87 instead of 24, suggesting they might contain the same consonant. This is at least supported by the tentative readings.

Regarding the alternation CM 104 ~ 107, we know that CM 107 is well-attested in CM 1 and 2 and is unlikely to be a V syllabogram like CM 104. At best their interchanging could mean that the value of CM 107 is C*i* instead of *za*[??]. Still, the alternation could just as well reflect the use of different prefixes, or it could be due to reasons not even linguistic. Signs CM 104 ( , ) and 107 ( , ) are very similar, and the only diagnostic trait that distinguishes them is the use of one more upper vertical stroke in 107. This might have motivated occasional confusions on the part of scribes.

As a final point, the pair 104-11-<u>24</u>-06-12-23 → *i*[?]*-pe*[??]*-<u>le</u>*[??]*-pa*[??]*-po*[??]*-ti*[??] (ENKO Arou 001.06) / 107-11-24-107-27-69-23 → *za*[?]*-pe*[??]*-le*[??]*-za*[??]*-si*[??]*-ja*[??]*-ti*[??] (ENKO Arou 001.12-13) allows for a possible alternation between CM 06 and 107, but the latter is not supported by the hypothetical sign values or by further internal examples.

4.2.2.3.6 CM 08, 17 and 65

30-70-**17**-23 (ENKO Atab 004.B.08) → ***30-*ki*[??]*-*no*[??]*-ti*[??]
30-<u>70</u>-**65** (ENKO Atab 004.B.19) → ***30-<u>*ki*</u>[??]*-*ni*[??]

This pair of sequences from side B of ENKO Atab 004 could feature a morphological international reflected in the alternation between CM 17 and 65. This would be supported by the hypothetical sound values, which suggest a common consonant *n*[??]. The problem is that the reading of sign CM 70 in the second sequence is dubious.

The following pair also concerns CM 65 as a possible member of a CM *n*[??] series:

25-06-**08** (ENKO Atab 002.A.I.27) → ***ka*[??]*-pa*[??]*-na*[??]
25-06-**65** (ENKO Atab 003.A.16) → ***ka*[??]*-pa*[??]*-ni*[??]

Yet it is even more problematic: not only is this a singular example, but the two sequences come from different texts. The connection cannot be considered demonstrated.

4.2.2.3.7 CM 11 and 44

Already discussed in 4.2.2.3.2.

4.1.1.1.1. CM 13 and 23

15-17 (CYPR Mvas 003) → ***ko***$^{??}$***-no***$^{??}$
15-17-**13** (ENKO Abou 024, 027) → ***ko***$^{??}$***-no***$^{??}$***-to***$^{??}$
15-17-**23** (ENKO Mins 001) → ***ko***$^{??}$***-no***$^{??}$***-ti***$^{??}$

This case is problematic because the forms come from different texts and are di- and trisyllabic. Moreover, even if they were related, the perceptible nucleus is 15-17, which is also attested on its own, so it is hard to argue that CM 13 and 23 contain the same consonant. In linguistic terms, this would be possible only if they contained different chains of suffixes (*-t-o*$^{??}$ vs. *-t-i*$^{??}$), or if 15-17 → *ko*$^{??}$*-no*$^{??}$ was the outcome of an apocopated form **ko-no-t-*.

4.2.2.3.8 CM 17, 23, 59 and 62

38-17-17 (ENKO Atab 002.B.I.03) → ***e***$^{?}$***-no***$^{??}$*-no*$^{??}$
38-17 (ENKO Atab 004.B.14) → ***e***$^{?}$***-no***$^{??}$
38-17-59 (ENKO Atab 004.B.15) → ***e***$^{?}$***-no***$^{??}$*-zo*$^{??}$
38-17-62 (ENKO Atab 004.B.16) → ***e***$^{?}$***-no***$^{??}$-*62

This might suggest some link between CM 17, 59 and 62, but the existence of 38-17 allows for the possibility that the first two signs are the nucleus and the third one represents in each case a distinct ending.

4.2.2.3.9 CM 21 and 62

52-30-**21** (ENKO Atab 003.A.01) → *52-*30-*ko*$^{??}$
52-30-**21**-08 (ENKO Atab 003.B.18) → *52-*30-*ko*$^{??}$***-no***$^{??}$
52-30-**62**-08 (ENKO Atab 003.A.08) → *52-*30-*62***-no***$^{??}$

This pair from ENKO Atab 003 suggests a nucleus 52-30-21/62-, where the alternation of CM 21 and 62 might indicate a phonetic relationship between the two. As they interchange only when -08 is added, possibly 52-30-21-08 and 52-30-62-08 are optional spellings of the same word. In this case, CM 21 and 62 could be similar with regard to their value, except for their consonant or vowel being slightly different, e.g. CM 62 could be *k*V$^{??}$ or C*o*$^{??}$. With this in mind, let us consider the following pair from the same tablet:

21-96-69-65 (ENKO Atab 003.A.09) → *ko*$^{??}$***-ri***$^{??}$***-ja***$^{??}$*-ni*$^{??}$
62-96-69-82[(ENKO Atab 003.A.08) → *62***-ri***$^{??}$***-ja***$^{??}$*-sa*$^{??}$[

In this case, the common nucleus 96-69 could indicate that the vowel of CM 21 → *ko*[??] and CM 62 is the same, that the consonant of CM 65 and 82 is the same, or both. It is only the first of these possibilities that is not contradicted by the hypothetical phonetic readings. All evidence taken together, there are sufficient grounds to assign the tentative value of (C)*o*[??] to CM 62. For the unprovable possibility that CM2 62 is an allograph of CM1 64 → *o*[?], see 2.3.13.

4.2.2.3.10 CM 29 and 35

102-76-**29**-08 (ENKO Atab 004.B.17) → ***a***[?]***-mo***[??]*-*29-*no*[??]
102-76-**35** (ENKO Atab 004.B.15) → ***a***[?]***-mo***[??]*-wi*$_2$[??]

The sequences in this example come from the same inscription, making the pair significant. However, in order to argue that the nucleus is not just 102-76- and also includes the consonant of CM 29 and 35, we would ideally need further examples. Unfortunately, there is just one more possible instance of alternation of the two signs and the sequences involved occur in different documents:

04-75-**29** (ENKO Atab 003.B.17) → ***ta***[??]***-ra***[??]*-*29
04-75-**35** (ENKO Atab 004.B.20; probably also B.18) → ***ta***[??]***-ra***[??]*-wi*$_2$[??]

The potential connection between CM 29 and CM 35 is not demonstrated, but to acknowledge the possibility presented by the two examples, I assign to CM 29 the tentative value *wo*$_2$[??], with the due question marks. The consonantal value *w*$_2$ echoes the possible tie to 35 → *wi*$_2$[??]. The *o* vocalism comes by process of elimination, if we consider a five-vowel grid: CM 01 and 35 are already proposed to be *we*$_2$[??] and *wi*$_2$[??]; *wa*$_2$[??] is unlikely because CM 29 (𐀾) is not expected to be the predecessor of CGk *wa* (whose better comparandum is CM 109 or 53/54/55); *wu*$_2$ is unlikely on typological grounds, though not impossible. Could CM 29 (𐀾) be the predecessor of CGk *wo* (𐀺)?[774]

4.2.2.3.11 Signs 33, 75, 96/85/114 and 97

É. Masson noted long ago the existence of a set of five CM 2 sign-sequences possibly displaying inflection:[775]

[774] Curiously, Nahm (1984: 166-167, Abb. 1-2) timidly proposes to read CM 29 as *wo*[?], but he bases this on remote comparisons with LB *wo* (𐀺) and CGk *wo* (𐀺), not on the interactions with CM 35, which he transliterates as *me*.
[775] É. Masson (1970, 93-94, fig. 15; 1978, fig. 9). The hypothetical phonetic readings assigned are found already in Saporetti (1976: 99).

68-25-**33**-25 (ENKO Atab 004.B.17) → ***nu***$^{??}$***-ka***$^{??}$***-r****e*$^{??}$*-ka*$^{??}$
68-25-**75** (ENKO Atab 004.B.11) → ***nu***$^{??}$***-ka***$^{??}$***-r****a*$^{??}$
68-25-**96** (ENKO Atab 004.A.*lat.sup*.) → ***nu***$^{??}$***-ka***$^{??}$***-r***V$^{??}$
68-25-**97** (ENKO Atab 004.B.10) → ***nu***$^{??}$***-ka***$^{??}$***-r****o*$^{??}$
68-25-**97**-17 (ENKO Atab 003.A.15) → ***nu***$^{??}$***-ka***$^{??}$***-r****o*$^{??}$*-no*$^{??}$

Four of these five sign-groups occur in the same text (ENKO Atab 004), three on side B and one in the "heading" (*lat.sup*.). This suggests strongly that what we have are inflected forms of the same word, one probably tied to the content of the inscription. The question, of course, is whether the common nucleus of these sequences corresponds only to 68-25- or whether the signs in third position, CM 33, 75, 96 and 97, contain a consonant that is part of it and therefore is always the same. 68-25-33-25 might be suggesting that -33- is part of the suffix, not the nucleus, if we take into account the sequence 104-12-33-25 in ENKO Atab 002.B.I.26:

68-25-33-25 (ENKO Atab 004.B.17) → *nu*$^{??}$*-ka*$^{??}$***-re***$^{??}$***-ka***$^{??}$
104-12-33-25 (ENKO Atab 002.B.I.26) → *i*$^{??}$*-po*$^{??}$***-re***$^{??}$***-ka***$^{??}$

Yet, the latter comes from a different text and we have no independent examples pointing to 104-12- being a nucleus. Conversely, 68-25-33-, 68-25-75-, 68-25-96 and68-25-97(-) are all from ENKO Atab 004 and the hypothetical readings corroborate the notion that the third sign contains the same consonant (*r*$^{??}$). Notice that this example suggests that CM 96 has a *r*V$^{??}$ value which, by process of elimination, ought to be *ri* or *ru*$^{??}$.

There is a second set of CM 2 sequences that backs the connection of CM 96 to the other suspected *r*$^{??}$ syllabograms:

102-75-04 | 47-**96**-27-69 (ENKO Atab 003.A.10) → ***a***$^{?}$***-ra***$^{??}$***-ta***$^{??}$ | ***t/su***$^{??}$***-r****i*$^{??}$*-si*$^{??}$*-ja*$^{??}$
102-75-04 | 47-**33**-54 (ENKO Atab 003.A.13) → ***a***$^{?}$***-ra***$^{??}$***-ta***$^{??}$ | ***t/su***$^{??}$***-r****e*$^{??}$*-ma*$^{??}$

Here we have two statements from the same text, with two consecutive sign-groups each, which moreover occur very close to each other in the tablet (they are separated by only two lines of inscription). The first sign-sequence is unchanged (102-75-04), while the second begins with the same sign, CM 47, followed by 96 in one instance and 33 in the other. It is likely that these statements represent slightly different variations of the same phrase. This example reduces the probability that the alternation of CM 33, 75, 96 and 97 is accidental. I would therefore remove one question mark and transliterate cm 33, 75 and 97 (still hypothetically) as *re*$^{?}$, *ra*$^{?}$, and *ro*$^{?}$.

As regards CM 96 (= CM 85/114) → *ri*/*u*$^{??}$, two different types of evidence point specifically to a value *ri*$^{??}$. In section 4.2.2.4.1 it will be demonstrated that, alongside signs CM 09 → *li*$^{??}$, 23 → *ti*$^{??}$, 27 → *si*$^{??}$, 85/96/114 is frequently found before CM 69

→ *ja*[??] and 88/89/90 → *jo*[??]. This statistical datum suggests that the first four syllabograms might have a phonetic relationship with the last two. The hypothetical values substantiate this suggestion and imply that what we have are strings of the type C*i*-*j*V. Secondly, we have seen in 3.4.5 that the signs of the hypothetical CM *r*[??] series are innovations that have only comparanda in Cypro-Greek, yet at first sight there are was no obvious model for CGk *ri* in Cypro-Minoan. However, to consolidate the hypothesis that CM 85/96/114 is to be read as *ri*[??], ideally we should find some paleographical link between the two. Neither CM 96 (), the more elaborate variants of 85 (), nor the two examples of the variant 114 (), seem like fitting matches for CGk *ri*. Yet the more simplified and late variants of CM 85, particularly the subtriangular and ,[776] are somewhat evocative of early Paphian CGk *ri* () (Table 4.13).

Table 4.13: Comparison between CM 96/85/114 and early Paphian CGk *ri*.

CM 96/85/114			**Early CGk *ri***	
				
ENKO Abou 051	ENKO Abou 064	→	*ICS* 367	*ICS* 327.A.10
				
ENKO Abou 081	ENKO Avas 005		*Rantidi* 42	*ICS* 352a.A.7

It is tempting to posit a development CM > > ~ > CGk ~ . We should keep in mind that the examples of CM 85 that could be dated are no earlier than the 12th century BCE, which squares well with the evidence pointing to it being both a later and more cursive version of CM 95 () and the predecessor of CGk *ri* (~). This should not be taken as a defense of a linear paleographical evolution of Cypro-Minoan signs, from the most complex to the simplest form: as implied in the development just posited, variants of a sign exhibiting different degrees of complexity may have coexisted for a long time, something we might expect judging by the significant variation still found in CGk *ri* in the 6th and 5th centuries BCE. As the reading *ri*[??] for the complex CM 85/96/114 receives support from the comparative and internal data, we can remove one question mark from its tentative transliteration.

[776] The five (out of the nine) clay balls that use CM 85 and have been dated (ENKO Abou 039, 040, 051, 066, and 081) have all been assigned to the LC IIIA/B (see *HoChyMin* and *CMI* II), i.e. they are not earlier than the 12th century BCE.

4.2.2.3.12 CM 51, 52, and 74

04-25 (ENKO Atab 003.A.08) → ***ta***[??]***-ka***[??]
04-25-**51**-08 (ENKO Atab 003.A.05) → ***ta***[??]***-ka***[??]*-pi*[??]*-na*[??]
04-25-**74**-54 (ENKO Atab 003.A.12) → ***ta***[??]***-ka***[??]*-wi*[??]*-ma*[??]
04-25-**74**-95 (ENKO Atab 003.A.14) → ***ta***[??]***-ka***[??]*-wi*[??]*-wa*[??]

The following set of sequences, all attested in ENKO Atab 003.A, could be evidence of either a nucleus 04-25- or 04-25- plus the consonant of CM 51 and 74. Unfortunately, the first option seems more likely. 04-25 occurs on its own and the distributional evidence in Table 4.14 implies that 04-25-51-08 is formed by 04-25 and a chain of suffixes.

Table 4.14: Evidence for -51 as suffix and -51-08 as a chain of suffixes in ENKO Atab 003.A.

Nucleus	**Nucleus + 51**	**Nucleus + 51 + 08**
04-25 (A.08)	—	04-25-**51**-08 (A.05)
38-33 (A.05)	38-33-**51** (A.05, 08, 11)	38-33-**51**-08 (A.19)
—	—	102/110-**51**-08 (ENKO Atab 002.A.I.29)
—	—	62-10-**51**-08 (A.07)

4.2.2.3.13 CM 54 and 95

04-25-**74**-54 (ENKO Atab 003.A.12) → ***ta***[??]***-ka***[??]*-wi*[??]*-ma*[??]
04-25-**74**-95 (ENKO Atab 003.A.14) → ***ta***[??]***-ka***[??]*-wi*[??]*-wa*[??]

In the previous section we have seen that this pair, together with two other sign-groups also from ENKO Atab 003.A, point to a nucleus 04-25-. Yet the pair is aditionally informative because it also it hints at a link between CM 54 and 95. There are three possible ways of interpreting it. The sequences may contain:

(1) A nucleus 04-25- + suffix -74- + two different suffixes, 54 and 95.

(2) A nucleus 04-25- + a suffix consisting of -74- and the consonant of -54 and -95 (in which case it would be the same) + a suffix made up of the vowel of -54 or the vowel of -95 (which would be different).

(3) A nucleus 04-25- + a single suffix -74-54/95, in which case CM 54 and 95 would be spellings variant because they contain similar sounds.

Notice that in scenario (1) CM 54 and 95 could equally reflect mere optional spellings of the same sounds. This would be in line with their tentative readings (CM 54 → *ma*[??] and 95 → *wa*[??]), according to which they conceal syllables formed by a labial consonant and /a/.

4.2.2.3.14 CM 70 and 110

27-08-**70** (ENKO Abou 053) → ***si***[??]***-na***[??]***-k****i*[??]
27-08-**110**-97-23 (ENKO Arou 001.04-05; KOUR Psce 001) → ***si***[??]***-na***[??]***-k****e*/*u*[??]*-ro*[??]*-ti*[??]

06-73-**110**-27-05 (ENKO Abou 018) → *pa*[??]*-mo*[??]***-k****e*/*u*[??]***-si***[??]***-lo***[??]
70-27-05-61-95 (ENKO Atab 003.A.17) → ***k****i*[??]***-si***[??]***-lo***[??]*-te*/*pu*(2)[??]*-wa*[??]

These pairs could point to a nucleus 70/110-27-05, in which CM 70 and 110 would be orthographic variants, as suggested by the hypothetical readings, or contain the same vowel. Yet both involve sequences drawn from distinct inscriptions, not to mention that 06-73-110-27-05 includes a doubtful sign.

4.2.2.3.15 CM 87 and 103

38-87-**87**-04-09-69-23 (ATHI Avas 001) → ***e***[?]***-la***[??]*-la*[??]*-ta*[??]*-li*[??]***-ja***[??]***-ti***[??]
38-87-**103**-23-69-23 (ENKO Arou 001.01) → ***e***[?]***-la***[??]*-*103-s****i***[??]***-ja***[??]***-ti***[??]

Although these two sequences are found in distinct documents, their length (seven and six signs, respectively) and their sharing of the first two and the last two syllabograms strongly suggests they contain the same additions, one a prefix and the other a suffix. As regards the possible prefix, two interpretations can be advanced. On one hand, if we consider only the two sequences shown here, the prefix seems to correspond only to 38-37-. If on the other hand the sequences 38-87-87-27 and 38-87-87-47-95 from ENKO Atab 002.B.I (see section 4.2.2.3.1) are related, then the prefix might actually be contained in 38-87-87-. In this case, 38-87-103- could be an orthographic variant of 38-87-87, meaning that CM 103 might contain the same consonant as 87. Unfortunately, there is no comparative evidence as regards the value of CM 103 that would help testing this notion.

4.2.2.4 V-C- connections as evidence for glide syllabograms

4.2.2.4.1 Interaction of CM 09, 23, 27 and 85/96 with CM 69 and 88/89/90

38-87-87-04-**09**-69-23 (ATHI Avas 001) → ***e*[?]*-la*[??]*-la*[??]*-ta*[??]*-li*[??]*-ja*[??]*-ti*[??]
38-87-103-**23**-69-23 (ENKO Arou 001.01) → ***e*[?]*-la*[??]*-*103*-ti*[??]*-ja*[??]*-ti*[??]
107-11-24-107-**27**-69-23 (ENKO Arou 001.11-12) → *za*$_2$[??]*-pe*[??]*-le*[??]*- za*$_2$[??]*-si*[??]*-ja*[??]*-ti*[??]
21-**09**-69-23 (ENKO Atab 003.B.19) → *ko*[??]*-li*[??]*-ja*[??]*-ti*[??]

Within this set, the likelihood that 38-87-87-04-09-69-23 (ATHI Avas 001) and 38-87-103-23-69-23 (ENKO Arou 001.01), are related is great, as seen in 4.2.2.3.15, even though they occur in different inscriptions. At the same time, 38-87-103-23-69-23 (ENKO Arou 001.01) and 107-11-24-107-27-69-23 (ENKO Arou 001.11-12) occur in the same document and share the last two signs. The sequence 21-09-69-23 appears in a different corpus and is much shorter, but it supports the idea that part of the value of sign 09 is involved in the suffix -69-23. If the group is related, the implication is that CM 09, 23, 27, by virtue of preceding the repeated string -69-23, may be connected phonetically. Notice that this is not the only set of sequences suggesting that CM 2 shares linguistic features with other inscriptions from Cyprus: we have seen that 38-87-87- occurs in ATHI Avas 001 as well as ENKO Atab 002.

Yet the link between 09, 23 and 27 is not restricted to this probable CM 1/2 suffix. As shown in Table 4.15, in the 29 secure instances of CM 69 in non-initial position, these three signs are precisely the ones that precede it most often.

Table 4.15: Signs that precede CM 69.

Sign	Secure instances			
	CM 1	CM 2	Total	
27	3	5	8	**≈27.59%**
09	2	5	7	**≈24.14%**
23	2	1	3	**≈10.34%**
65	0	2	2	≈6.90%
96	0	2	2	≈6.90%
103	1	0	1	≈3.45%
50	1	0	1	≈3.45%
24	0	1	1	≈3.45%
37	0	1	1	≈3.45%
56	0	1	1	≈3.45%
87	0	1	1	≈3.45%
104	0	1	1	≈3.45%
Total	9	20	29	100%

CM 09 and 27 occur before CM 69 more than 20% of the time and so are likely to have a special connection with it. CM 23, 65 and 96 come next, but their number of appearances in the same position is a bit less significant. In any case, CM 09, 23 and 27 have the three highest percentages and this fact agrees well with their presence before -69-23.

In abstract terms, this connection would make sense if the vowel of CM 09, 23 and 27 were part of the suffix as well, i.e. -V-69-23. However, it could also owe to a phonetic relation between that vowel and the initial consonant of CM 69, if the latter were a glide. This is what we see when we resort to the hypothetical readings: the values of CM 09, 23 and 27 are of the type C*i*$^{??}$, whereas CM 69 is provisionally read *ja*$^{??}$, implying that they form spellings of the type C*i*-*j*V.

One way to test this hypothesis is to investigate whether the same signs have high percentages before the other syllabogram suspected of having a value of the type *j*V$^{??}$: CM 88/89/90 → *jo*$^{?}$. The results (shown in Table 4.16) are encouraging.

Table 4.16: Signs that precede CM 88 (CM 1) and 89/90 (CM 2).

Sign	Secure instances			
	CM 1	CM 2	Total	
96/85/114	7	0	7	**≈31.82%**
09	4	2	4	**≈18.8%**
23	0	2	2	≈9.09%
82	1	1	2	≈9.09%
91	1	0	1	≈4.55%
04	1	0	1	≈4.55%
60	0	1	1	≈4.55%
59	0	1	1	≈4.55%
27	0	1	1	≈4.55%
87	0	1	1	≈4.55%
25	0	1	1	≈4.55%
Total	12	10	22	100%

Thus, CM 09 → *li*[??] and 85/96/114 → *ri*[??] are the signs with the highest percentages.[777] This statistic is satisfactory by itself, but if we analyze together the figures of the signs that precede both CM 69 → *ja*[??] and 88/89/90 → *jo*[?], then we get high percentages of occurrences of CM 09 → *li*[??], 23 → *ti*[??], 27 → *si*[??] and 85/96/114 → *ri*[??] before the two *j*V[??] syllabograms. It can hardly be a coincidence that these signs produce a significant number of hypothetical readings of the type C*i*-*j*V.

4.2.2.4.2 Interaction of CM 28, 47 and 61 with CM 95

The establishing of connections between syllabograms whose readings produce -*i*[??]-*j*V[??] strings serves as encouragement to look for similar evidence for the other type of glide that seems possible in Cypro-Minoan: -*u*[??]-*w*V[??]. However, this is a much thornier case.

The problems begin with the fact that CM 01 → *we*$_{(2)}$[??] cannot supply conclusive results. Even considering all subcorpora together, only in four occasions can we can be certain of which syllabogram precedes it, and in each case a different sign is involved. In statistical terms, this is hardly significant.

Similarly, CM 74 → *wi*[??] is attested only five times in CM 2 and twice in CM 3. These few instances lead to results of little consequence: the sign is preceded twice by CM 25 in CM 2 and twice by 102 in CM 3.

[777] The somewhat disproportionate result of CM 85/96/114 owes to the repetition of the sequence 82-96-88-23 three times in ENKO Arou 001. If the two repetitions were discounted, the values for 85/96/114 and 09 would be 25% and 20% respectively.

CM 35 → *wi*$_2^{??}$ is not much more helpful. CM 1 gives us nothing but two sequence-initial attestations of the sign, while in CM 3 we obtain only one safe case of a preceding sign (CM 38). CM 2 is slightly more informative. Here, CM 35 is preceded by ten different signs. All occur only once with the exception of CM 102 → *a*$^{??}$, which appears seven times. This is datum telling, in the sense that it betrays a special connection between 102 and 35. In fact, the string 102-35- might be a prefix or nucleus of some sort. However, it obviously does nothing to support the existence of possible *u*$^{??}$-*w*V$^{??}$ strings involving CM 35.

We are left with CM 95 → *wa*$^{??}$. We have seen that the sign is not attested in CM 1. In CM 3 it occurs only once and is preceded by CM 28 → *lu*$^{??}$. Again, CM 2 is the set which informs us best (see Table 4.17).

Table 4.17: Signs that precede CM 95.

	CM 1	CM 2	CM 3	Addenda	CM
61	—	4 (26.7%)	—	—	4 (25%)
47	—	3 (20%)	—	—	3 (18.75%)
28	—	2 (13.3%)	1 (100%)	—	3 (18.75%)
Others	—	6 (40%)	—	—	6 (37.5%)
Total	—	15	1	—	16

Apparently, CM 95 has a special relation with sign CM 61 → *te*/*u*$^{??}$ or *pu*(2)$^{??}$ and possibly (but less certainly) also with CM 47 → *s*/*tu*$^{??}$ and 28 → *lu*$^{??}$. The fact that the three have hypothetic C*u* values is consistent with transition spelling of the type -*u*-*w*V. This is encouraging, but unfortunately it does not help to refine the value of CM 61, as the two hypothetical values pondered in Chapter 3, *te*/*u*$^{??}$ and *pu*(2)$^{??}$, contain the vowel *u*.

É. Masson and Nahm interpreted -61-95 as a suffix because the string is sequence-final in its four instances:

38-82-61-95 (ENKO Atab 002.A.I.38) → *e*$^{?}$-*sa*$^{??}$-61-*wa*$^{??}$
79-05-61-95 (ENKO Atab 002.A.I.43) → *u*$^{?}$-*lo*$^{??}$-61-*wa*$^{??}$
62-17-51-61-95 (ENKO Atab 002.A.I.37) → *62-*no*$^{??}$-*pi*$^{??}$-61-*wa*$^{??}$
70-27-05-61-95 (ENKO Atab 003.A.17) → *ki*$^{??}$-*si*$^{??}$-*lo*$^{??}$-61-*wa*$^{??}$

The existence of such suffix would mean that the connection between CM 61 and 95 could be due to their coexistence in a grammatical element and not necessarily because of a phonetic link. However, it is not certain that -61-95 represents a suffix as there is no separate attestation of the nuclei 38-82-, 79-05-, 62-17-51- and 70-27-05- to corroborate

the idea. It is more likely that -05-61-95 (cf. 79-05-61-95 and 70-27-05-61-95 above) is what constitutes a nucleus of suffix.

Two other facts present very circumstantial evidence: CM 95 is once preceded by 79 → $u^{??}$ in CM 2, whereas its single occurrence in CM 3 is after 28 → $lu^{??}$.

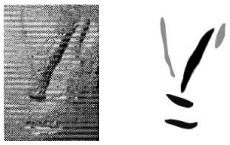
4.2.3 Other evidence for phonetic relations: scribal mistakes

It is a virtue of clay inscriptions that on occasion erased signs can be read despite the scribe's amendment. One possible cause of these scribal mistakes is a phonetic similarity of the two syllabograms involved. If they are of the CV type, the match can be either in the consonant or in the vowel.[778] Of course, scribal errors may be due to other factors and become misleading, so as always caution is warranted.

4.2.3.1 CM 87 corrected to 09

In ENKO Abou 063, a 09 was inscribed over an 87 by adding to the latter a second horizontal line below and deepening two of its oblique strokes.[779] In this case, at least, the connection corroborates the readings (*la*$^{??}$ and *li*$^{??}$) suggested by the comparative method.

Table 4.18: Correction of CM 87 to 09 in ENKO Abou 063 with parallels for each sign form.

CM 87 > 09	**CM 87**	**CM 09**
		
ENKO Abou 063	HALA Abou 001	ENKO Abou 051

4.2.3.2 CM 85 corrected to 97

The upper part of CM 97 strangely appears with two horizontal strokes instead of one in ENKO Abou 042. It might be a mistake if the scribe confused CM 97 with 85/96. KITI Iins 002*b.c* probably features a similar situation. See Tables 4.19 and 4.20.

[778] Chadwick (1970: 54).
[779] *HoChyMin*: 96.

Table 4.19: Correction of CM 85 to 97 in ENKO Abou 042 with parallels for each sign form.

CM 85 > 97	**CM 85**	**CM 97**
		
ENKO Abou 042	ENKO Abou 039	HALA Abou 001

Table 4.20: Possible correction of CM 85 to 97 in ENKO Abou 042 with parallels for each sign form.

CM 85 > 97	**CM 85**	**CM 97**
		
KITI Iins 002*b.c*	ENKO Avas 005	KITI Avas 001

4.3 SYNTHESIS OF THE RESULTS

4.3.1 Evidence for a V series

In 4.2.1 we have seen confirmation of the internal evidence for the value of five mono-vocalic signs: CM 19/79 → $u^{?}$, 38 → $e^{?}$, 64 → $o^{?}$, 102 → $a^{?}$ and 104 → $i^{?}$. It remains an open question whether CM2 62 is an allograph of CM1 64. In this chapter we have only seen indication that its vocalic value could be *o*, depending mostly on whether the value of CM 15/21 → $ko^{??}$ is correct. For now, the tentative reading ascribed to this form is (C)$o^{??}$.

4.3.2 Evidence for a j series

We can now remove one question mark from CM 69 → $ja^{??}$ and 88/89/90 → $jo/u^{??}$, as well as refine the vocalic reading of the latter. Section 4.2.2.4.1 has shown that both signs tend to be preceded by syllabograms whose hypothetical value is C$i^{??}$, implying strings of the type C*i*-*j*V. Moreover, 4.2.2.2.1 offers circumstantial evidence that CM 69 contains the same vocalic value as CM 08 → $na^{??}$ and CM 75 → $ra^{??}$, while 4.2.2.2.4 suggests strongly that CM 88/89/90 is a C*o* sign. As a consequence, I reformulate the hypothetic values of these signs as CM 69 → $ja^{?}$ and 88/89/90 → $jo^{?}$.

4.3.3 Evidence for a k series

Unfortunately, the above survey yielded no solid internal evidence corroborating the readings of CM 25 → *ka*[??], CM 110 → *ke*/*u*[??], CM 70 → *ki*[??] and CM 15/21 → *ko*[??].

4.3.4 Evidence for a l series

Section 4.2.2.3.5 contains morphological evidence that CM 24 → *le*[??] and 87 → *la*[??] have the same consonant, thus lending credibility to the hypothetical readings. A scribal mistake in ENKO Abou 063 suggests that CM 87 has, moreover, a value similar to that of 09 → *li*[??] (4.2.3.1), thus substantiating the values further. There is indication also from morphological activity that CM 09 and 87 (4.2.2.3.4), as well as CM 05 → *lo*[??], CM 09 → *li*[??] and 28 → *lu*[??] share the same consonant, but it is only circumstantial (4.2.2.3.2). Regarding the vocalic values, we have seen evidence that CM 09 is a C*i* syllabogram (4.2.2.4.1) and CM 28 a C*u* sign (4.2.2.4.2). As a consequence, we can reformulate the working values of these signs: CM 87 → *la*[?], CM 24 → *le*[?], 09 → *li*[?], CM 05 → *lo*[??] and 28 → *lu*[?].

4.3.5 Evidence for an m series

There is hardly any internal evidence that substantiates the readings of syllabograms potentially forming an *m* series. In 4.2.2.3.13 we have seen one possible alternation between CM 54 → *ma*[??] and CM 95 → *wa*[??], but it is insufficient to reinforce the hypothesized values.

4.3.6 Evidence for an n series

Section 4.2.2.3.6 offers one piece of evidence implying that CM 17 → *no*[??] and 65 → *ni*[??] have the same consonantal value, as well as a timid indication that CM 65 → *ni*[??] contains the same consonant as CM 08 → *na*[??]. Likewise, there is only circumstantial evidence that CM 08 has the vocalic value *a* (4.2.2.2.1). The data corroborating the vocalic value of CM 17 → *no*[??] are much more solid (4.2.2.2.4). I thus reformulate the value of CM 17 as *no*[?] and that of 65 as *ni*[?].

4.3.7 Evidence for a p series

The only progress concerning the potential CM *p*[??] series comes from the indications that the vocalism of CM 12 → *po*[??] is indeed *o* (see 4.2.2.2.4). I therefore reformulate its reading to CM 12 → *po*[?]. Section 4.2.2.4.2 contains evidence that the vocalic value of

CM 61 → *te*/*u*[??] or *pu*(2)[??] is indeed *u*, but this still leaves us with *tu* and *pu*(2)[??] as competing possibilities.

4.3.8 Evidence for a q series

CM 98 → *qa*[??] is the only sign that has been given a *q*[??] value and it is so rare that it yields no evidence for an internal analysis.

4.3.9 Evidence for an r series

The data discussed in 4.2.2.3.11 supports the notion that CM 33 → *re*[??], 75 → *ra*[??], 85/96/114 and 97 → *ro*[??] contain the same consonantal value. Concerning their vocalism, 4.2.2.2.1 includes only circumstantial evidence that CM 75 is a C*a* syllabogram, but 4.2.2.4.1 strongly supports a C*i* value for CM 85/96/114 and 4.2.2.2.4 validates the C*o* value of CM 97. Importantly, we have seen that once we have gathered internal evidence for reading CM 85/96/114 as *ri*[??], it becomes plausible to *compare* it with the earliest examples of CGk *ri*. The hypothetical values of these four signs can now be given as follows: CM 33 → *re*[?], 75 → *ra*[?], 85/96/114 → *ri*[?] and 97 → *ro*[?].

4.3.10 Evidence for an s series

One set of sequences in 4.2.2.3.1 suggests that CM 27 → *si*[??] and CM 47 → *s*/*tu*[??] have the same consonant, although it is also possible that the latter shares the consonantal value of CM 04 → *ta*[??]. In any case, it became clear in 4.2.2.4.1that C*i* is probably the correct value of CM 27, while section 4.2.2.4.2 supports the *u* vocalism of CM 46/47. Therefore I reformulate their hypothetic readings to CM 27 → *si*[?] and CM 47 → *s*/*tu*[?].

4.3.11 Evidence for a t series

We have just seen that the consonant of CM 47 → *s*/*tu*[?] remains ambiguous, so it could still belong in this series. Other than that, one question mark can be removed from CM 13/78 → *to*[??], as a consequence of the data pointing to a C*o* syllabogram (4.2.2.2.4), as well as from CM 23 → *ti*[??], because it occurs frequently before CM 69 → *ja*[?] and 88/89/90 → *jo*[?], in what appear to be strings of the type C*i*-*j*V (see 4.2.2.4.1, especially Tables 4.15-4.16).

4.3.12 Evidence for a w series

Only CM 95 → *wa*[??] receives some support (see 4.2.2.3.13 and 4.2.2.4.2), hence I revise its hypothetical reading to *wa*[?].

4.3.13 Evidence for a w_2 series

As a result of the analysis in 4.2.2.3.10, I assigned the tentative value of $wo_2^{??}$ to CM 29. The consonant is suggested by a possible connection to 35 → $wi_2^{??}$ and the vocalism owes to a process of elimination. It is also worthwhile mentioning that CM 29 appears before sequence-final CM 17 once, an environment that seems to prefer C*o* syllabograms (see 4.2.2.2.4).

4.3.14 Evidence for a z series

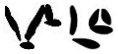
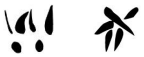
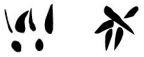
There is no internal evidence concerning the only member suggested by this potential series in Chapter 3, CM 112 → $z/ke^{??}$.

4.3.15 Evidence for a z_2 series

There is no strong internal evidence concerning the two members suggested for this potential series in Chapter 3, CM 59 → $zo_2^{??}$ and 107 → $za_2^{??}$ (but cf. 4.2.2.2.3).

The hypothetical values of Cypro-Minoan as reformulated after the foregoing analyses are presented in Table 4.21.

Table 4.21: Grid with hypothetical sign values after the internal analyses.

	A	**E**	**I**	**O**	**U**
	 102/101[?]	 38[?]	 104[?]	 64[?]	 19/79[?]
J	 69/72[?]			 88-90[?]	
K	 25[??]	 110[??] 112[??]	 70[??]	 21/15[??]	 110[??]
L	 87[?]	 24[?]	 09[?]	 05[??]	 28[?]
M	 53-55[??] 109[??]	 35[??]	91[??]	 73[??]	 39/49[??]
N	 08[??]	 02[??] 34/56[??]	 65/67/99-100[?]	 17[?]	 68[??]
P	 06[??]	 11[??]	 50/51[?]	12[?]	 37[??] 41[??] 61[??]
R	 75[?]	 33[?]	 85/96/114[?]	 97[?]	
S	 82[??]	 44[??]	 27[?]	 37[??]	 46/47[?]
T	 04[??]	 07[??]	 23[?]	 13/78[?]	 46/47[?] 61[??]
W	 95[?]		 74[??]		
W_2	 53-55[??] 109[??]	 01[??]	 35[??]	 29[??]	
Z		 112[??]			 (CM0 17[??])
Z_2	 107[??]			 59[??]	
PA_2	 72b[??]	**PU_2**	 37[??]	**QA**	 98[??]

Chapter 5

TESTING THE HYPOTHETICAL SIGN VALUES

5.1 AIMS AND PROCEDURE

In this Chapter the sound values suggested by the independent procedures of Chapters 3 and 4 are employed to transliterate provisionally specific Cypro-Minoan inscriptions. The goal is to see whether these transliterations yield readings corresponding to linguistic material known from external sources, therefore confirming the validity of the hypothetical sign values and possibly even suggesting new ones.

As will be seen in 5.2, our knowledge of the language or languages used in Cyprus in the Late Bronze Age, prior to the appearance of Cypriot Greek, Phoenician and Eteocypriot inscriptions on the island, is meager at best. Conversely, there is a distinct possibility of detecting foreign linguistic elements, especially onomastics, in the Cypro-Minoan documentation. Because of their geographical and cultural setting, the inscriptions found at Ugarit are much more promising than the material retrieved at Cypriot sites in this regard. The type of linguistic material in the Cypro-Minoan documents from coastal Syria may of course turn out to be much varied in nature, possibly ranging from isolated loanwords and place or personal names to a full text in a non-Cypriot language. At the same time, if the subject of a given Ugarit inscription is thoroughly Cypriot, a complete absence of Syrian elements is possible. No possibility is to be discarded at this point.

5.2 THE LATE BRONZE AGE LANGUAGE(S) OF CYPRUS

Before we examine the Cypro-Minoan evidence from Ugarit, we can attempt a glimpse at the material concealed by the material from Cyprus. Unfortunately, in the period between the first attestations of Alasiya in the cuneiform sources, during in the Middle Bronze Age, and the first occurrences of Cypro-Greek and Phoenician inscriptions on Cyprus in the Early Iron Age, the linguistic reality of the island only perspires in bits and pieces of onomastic evidence, mostly place and personal names. These are fixated in the cuneiform documents of Cypriot production or various external sources from the cuneiform world, Egypt and the Aegean.

The macrotoponym Alasiya (syllabic cuneiform $^{URU/KUR}$*A-la-ši-(i)a*; Egyptian *ỉrs3* → *ʾá-la-sá*, alphabetical Ugaritic *alṯy*; cf. also Linear B toponymic adjective *a-ra-si-jo*; Biblical Hebrew אלישה = ʾElišah and the Cypro-Greek epithet *a-la-si-o-ta-* =

Phoenician *ʔlyyt*-)[780] is the first possible Cypriot word to be attested in external documents, namely clay tablets from the city of Mari in the Middle Euphrates dated to ca. 1800 BCE, and also the object of some discussion. In an article that was much focused on attempting to identify the languages behind Alasiyan place and personal names found in external sources, often by means of unconvincing Semitic, Hurrian and Indo-Aryan etymologies, Astour endeavored to establish the source of the very name of Alasiya. According to his etymology, *Alašiya* was based on the Hurrian word *allā*(*i*)- 'lady' + *-še/i-*, a "suffix [that] expresses the idea of belonging, pertaining" + *-ya*, a "onomastic suffix". It would therefore be a fully Hurrian formation meaning "Pertaining to the (Divine) Lady", which Astour sought to associate with the 1st millennium BCE symbolic connection between Cyprus and the goddess Aphrodite, known by the Greek epithet of *wa-na-sa* 'the Lady'.[781] This view has sometimes been endorsed.[782] In the light of current knowledge, it is clear that Astour was inspired by the Hurrian abstract noun *all=a=šše* 'ladyship', formed with *allai*- plus a nominal suffix *-(a)=šše,*[783] but such a noun cannot be considered synonymous with '(Territory) of the Lady'. More importantly, there is no independent evidence to suggest that the Bronze Age name of Cyprus was in any way related to a female deity. Ultimately, Astour's idea is founded exclusively on the superficial formal likeness between Alasiya and *all=a=šše*, and therefore we should remain wary of this etymology, as well as the unsupported notion that Hurrian was a prominent language on Cyprus during the 2nd millennium BCE. Above all, we must keep in mind that, although Alashiya was used in practically the whole of the Eastern Mediterranean, it may still have been an exoethnonym rather than the self-designation of Bronze Age Cypriots.

The second earliest piece of evidence is a personal name attested in a ration list from 18th century BCE Alalaḫ: *Arammu* (*A-ra-am-mu*), the "Alasiyan" (^{LÚ}*A-la-ši-i*). This name tells us little and caution is advised as regards assuming it is Cypriot, since it is preceded and followed by local Syrian anthroponyms.[784] The use of a toponymic adjective need not indicate that the individual in question was an actual native of Cyprus. It may have been a way to refer to a person that had stayed on Cyprus for a relevant period of time or was involved in relevant affairs there. A second name, *Arimurate* (*A-ri-mu-ra-te*), is known from Alalaḫ, this time in a 15th century BCE list of householders from Syrian villages, and refers to an individual from the "land of Alasiya" (^{KUR}*A-la-ši-ia*).[785] The attempts by Astour to etymologize this anthroponym as Hurrian are again not compelling.[786]

[780] See Knapp (1996) and *DULAT*: 67-68, with references.
[781] Astour (1964: 242).
[782] See e.g. Knapp (1996: 7), with some caution.
[783] See Wegner (2007: 55).
[784] Wiseman (1996: 20).
[785] Wiseman (1953: 73) apud Astour (1964: 242) and Wiseman (1996: 20).
[786] Astour (1964: 242).

The 14th century BCE international correspondence from the El-Amarna archive mentions six envoys sent from Alasiya to Egypt: *Baštumme* (*Pa-áš-tum-me-e*), *Kunē(y)a* (*Ku-ni-e-a*), *Etilluna* (*E-til-lu-na*, or possibly *E-be-lu-na*), *..-rumma* (*..-ru-um-ma*), [x.-]*uš-bar*(*pa?*)*-ra* and *Belšamma*(?) (*Be-e*[*l*]*-š*[*a*]*-am-m*[*a*]).[787] Two names are damaged and not all of the well-preserved ones are clear, but *Belšamma* is clearly a Semitic name meaning 'The lord has heard', constructed with an form of *bʕl* 'lord' resembling Akkadian *bēlu* and a form of the verb *šmʕ* 'to hear'.[788] *Baštumme* has been interpreted as containing the Akkadian divine name *Baštu* 'Dignity', [789] while [x.-]*uš-bar*(*pa?*)*-ra*, whose first sign, at first doubtful, appears to be the determinative for a personal name, might be a sort of professional moniker corresponding to Akkadian *i/ušparu* 'weaver'.[790] Although Hess interprets *Ku-ni-e-a* as West-Semitic, this is not a consensual view. The name compares well with alphabetical *kny* and syllabic *ku-ni-ia* from Ugarit, of uncertain etymology according to Del Olmo and Sanmartín.[791] Unless the name is the shortened form of a Semitic or Hurrian anthroponym, it might be Cypriot. As regards *Belšamma*, *Baštumme* and *Uš-b/parra*, the use of Semitic names by some envoys from Cyprus does not necessarily reflect the linguistic reality of the island. The rulers of the Eastern Mediterranean powers of the day naturally would have sought polyglot individuals to deal with foreign affairs, including foreigners, so the agents sent abroad by the Alasiyan king may at times have been non-Cypriots. To this respect, the presence of Ugaritians at Alasiya, including a scribe mentioned in text RS 94.275, is well-documented.[792] At best, this is evidence for the presence of Semitic-speaking people on the island and linguistic contact between West-Semitic languages and whatever was spoken locally, but one needs not, and should not, assume a larger role for Syrian languages on Cyprus.

An Akkadian letter found at Ugarit was sent by *Ešuwara* (*E-šu-wa-ra*), the senior perfect of Alasiya, around the late 13th or early 12th century BCE. Unpublished correspondence from the same Syrian town has revealed the name of the contemporary king of Alasiya, *Kušmašuša* (RS. 94.2177 + 2491 and 94.2475), as well as that of other Alasiyan characters: *Šangiwa* and *Šinama* (RS94.2447 + 2588 + 2590).[793]

An alphabetical document from Ugarit (RS 18.42:2) mentions a *abrm alṯyy* 'Abiramu, the Alasiyan' (*abrm* = syllabic *a-bi-ra-mi*[794]). Again, Abiramu is a clear West-Semitic name, but we should not take literally his description as an "Alasiyan".

Finally, the Egyptian "Story of Wenamun", alluding to possible historical events in a 11th- or 10th-century BCE setting,[795] mentions a "queen" or "princess" (*wrt*) of a

[787] See Astour (1964: 242-245) and Hess (1993).
[788] Hess (1993: 56).
[789] Hess (1993: 54-56).
[790] Hess (1993: 184).
[791] *DULAT*: 451, citing Grøndahl (1967: 51, 153, 278)
[792] See e.g. *CMI* I: 142, 145.
[793] Bordreuil and Malbran-Labat (1995: 445);
[794] *DULAT*: 12.
[795] Sass (2002).

village of Alasiya, probably in the south or eastern coast of Cyprus. This character is named *Ḥ-t-b*, *Ḥ3-tj-b3 or Ḥu-ta-bi*, according to different transliterations given in the literature.[796] Again, there have been efforts to etymologize this name as Semitic,[797] but given the ambiguity of the Egyptian vocalization, the shortness and opacity of the name, and our ignorance of the Cypriot language(s) of the day, caution is warranted.

Without surprise, the few attested names of high-ranking individuals of Alasiya are linguistically opaque, hinting at their sourcing in an unknown language. This is a faint suggestion that at least one language that is not obviously connected to the Indo-European (Greek, Anatolian), Afro-Asiatic (West-Semitic and Egyptian) and Hurrian and Urartian, may have been spoken in Cyprus during the Late Bronze Age and underlies the Cypro-Minoan texts.

Eteocypriot, the "partially understood language of unknown affinity" found in about 25 Cypro-Greek inscriptions,[798] plays an important role in discussions of the linguistic reality of 2nd-millennium BCE Cyprus. Starting with Bork (1930) and Daniels (1941), it has long been speculated that it represents a continuum of a language spoken in the island centuries before.[799] There is nothing intrinsically problematic with this assumption of continuity, but, of course, it needs to be demonstrated (or refuted). The small corpus of Eteocypriot includes: four stone inscriptions from Palaeopaphos-*Kouklia* (*Kouklia* 93, 224 and 225, and *Paphos* 249) produced no later than 498 BCE; one early 5th century BCE inscribed intaglio from Kourion; a cluster of eighteen Amathusian inscriptions, of which thirteen (*ICS* 196) are thought to date to the 4th century BCE, including four Eteocypriot-Greek bilinguals (ICS 196, 196d and 196e, and *Amathus* 33); and two *graffiti* from Egypt, namely Abydos (*ICS* 388) and Karnak (*Karnak* 31c) that date to the early 4th century BCE. As usual with poorly-attested and poorly-understood ancient languages, the search for the linguistic affinities of Eteocypriot, which has been ongoing for more than a century, has involved abundant speculation linking it to several neighboring (sometimes less so) language families, including Indo-European Anatolian (Lycian) and Semitic (Akkadian, Phoenician).[800] A very old theory that still enjoys some popularity relates Eteocypriot with two agglutinative languages from Southwest Asia, Urartian and Hurrian—the latter, as we

[796] *Ḥ-t-b*, given in Schipper (2005: 97), is considered "misleading" by Astour (1964: 247), who reports it as written in a special kind of Egyptian syllabic orthography called "group writing". Following Albright's method for transcribing the latter, Astour transliterates *Ḥu-ta-bi*. Differently, Schneider (1992: 173) provides the reading *Ḥ3-tj-b3*, followed by Egetmeyer (*DGAC*: 376).

[797] Astour (1964: 247).

[798] The most recent and judicious inventory of texts is Steele (2013: 105-118). See also *DGAC*. Steele lists 26 possible Eteocypriot documents, but her text EC 24, with the sequence *po-ro-ta-pi-tu-na*, is probably Greek 'first-rank *pitunā* (a vessel)' (Neumann 2004: 126 apud *DGAC*: 836-837). For Duhoux (2009b: 43), the number is 23.

[799] Already Daniel (1941: 249, cf. fn. 2) mentions that the non-Greek language of the Cypro-Greek syllabary, i.e. Eteocypriot, "may have been spoken by part of the populace of the island in the Bronze Age". Bork (1930) apud *ICS*^{2}: 83-84 also speculated that Eteocypriot was a descendent of the language from Late Bronze Age Alasiya.

[800] For a complete bibliography from 1910 through 1983, see *ICS*^{2}: 85-86, n. 5. For a more recent but shorter overview, see Steele (2013: 103, with refs.).

have seen, was also a favorite in attempts at deciphering Cypro-Minoan. In her recent treatment of the Eteocypriot corpus and language, Steele correctly stresses that the "very small number of surviving inscriptions" and "the extremely limited pool of evidence on which to base any interpretation" are at present insufficient to apply the comparative method of linguistics and determine its affinities[801]—and this assuming that any recognizable relative is attested somewhere and is available for comparison. Furthermore, there is not enough evidence for establishing as certain that Eteocypriot was agglutinative, as has often been claimed in connection with Hurro-Urartian hypotheses.[802] The very few linguistic features of Eteocypriot that could be ascertained, in most cases without any certainty regarding their function, are listed in Table 5.1. For an updated "word list" of Eteocypriot, see Steele.[803]

Table 5.1: Well-established linguistic features of Eteocypriot.[804]

Feature	Function
-o-ko-o-	Patronymic suffix
-o-ti	Case ending (Genitive? Dative?)
-o-se	Case ending (Accusative?)
-i	Ending of unknown function
-o	Ending of unknown function

Egetmeyer proposes the existence of related "Amathusian Eteocypriot" and "Paphian Eteocypriot" dialects, a problematic notion in itself, as it relies on the assumption that the two or three dedications in Eteocypriot language at Palaepaphos-*Kouklia* were made by locals and not, for example, by pilgrims from other Cypriot regions. In addition, the same author defends the existence of multiple non-Greek languages in Cyprus, namely that Amathus and Golgoi were foci of distinct native tongues in the Iron Age, an idea he bases on the "apparent linguistic diversity" of the Late Bronze Age Cypro-Minoan inscriptions.[805] This is an instance of an *obscurum per obscurius* account. What seems clear from the epigraphical evidence is that Amathus was the heart of a tradition whereby a non-Greek, non-Phoenician language that was already there came to be inscribed in a Greek syllabary no later than the 4th century BCE. But at least one of its linguistic features, namely the ending *-o-ti*, appears in other areas of Cyprus (Paphos and perhaps Kourion) in other chronological periods, including possibly one Golgian inscription.[806] Duhoux has argued, correctly as will be seen in 5.5,

[801] Steele (2013: 103).
[802] Deroy (1956); Petit (1995; 1997-8).
[803] Steele (2013: 123-124, Table 7).
[804] Based on the recent discussion in Steele (2013: 135-137, with references).
[805] Egetmeyer (2012: 433).
[806] Cf. the sequence *we-ka-te-ti-po-si-ro-ti* in *ICS* 295, a non-Greek inscription from the ancient site of Golgoi (Athienou) (*DGAC*: 619).

that the very same feature is found in at least one of the Cypro-Minoan subcorpora (CM 1), and this sort of data is what informs us, however meagerly, of links between the linguistic reality of Cyprus from the 2nd and that of the 1st millennium BCE.

5.3 CYPRO-MINOAN ORTHOGRAPHIC CONVENTIONS: A TYPOLOGICAL FRAMEWORK

Whether because of certain Cypriot names (e.g. *Kušmašuša*) or the onomastic material from various Eastern Mediterranean languages (including Hurrian and several Semitic languages), doubtless Cypro-Minoan was at least occasionally used to write words that contained closed syllables and consonant clusters. In such cases, the users of the script had to adopt certain strategies to transcribe these features. In the tests that follow such situations may occur and, as a result, we need to investigate what orthographic norms one should expect to find in the Cypro-Minoan texts. This investigation can be done typologically by looking at the orthographic rules of related Aegean-Cypriot syllabaries of open syllables: rules that are common to all systems were very likely used in Cypro-Minoan as well. The assumption is that strategies shared by Linear B and Cypriot Greek are most probably inherited features from a common ancestor and less likely independent innovations. Whenever there are clues for the presence of said features in Linear A, this assumed is reinforced, even if not demonstrated.

Mycenaean scribes had two basic rules for representing features that were irreconcilable with the syllabic structure of Linear B:

> (1) Regardless of their position in the word, two adjacent consonants (C_1C_2) are spelled in one of two ways, depending on their relative position within a "Hierarchy of Orthographic Strength" proposed by Woodard:[807]
>
> Stops /t, t^h, d, p, p^h, k, g, k^h, k^w, g^w, k^{wh}/ > fricatives /s/ > nasals /m, n/ > glides /w, j/ > liquids /l, r/
>
> (1.1) If $C_1 \geq C_2$ (i.e. the second consonant is of lesser or equal strength compared to the first consonant), then the cluster is "broken" by separating the consonants with a "empty" vowel taken from the following syllable, in what we may call "progressive" spelling: e.g. ***ko-no-****so* /**Kn**ōsos/.
>
> (1.2) If $C_1 < C_2$, then C_1 is omitted from spelling: e.g. *pa-i-**t**o* /P^hai**s**tos/.[808]

[807] Woodard (1994 apud 1997: 62, 65 and passim), summarized by B. Davis (2014: 148).

[808] As a consequence of rule (1.2), the only consonant which is not written in word-initial position in Linear B is [s-] when followed by a stop, hence e.g. ***pe-ma*** for /**sp**erma/ 'seed' (Woodard 1997: 60). Yet once in a text from Knossos (KN C 941) we find ***sa-pa-ka-te-ri-ja***, presumably for /**sp^h**aktēria/ 'victims', instead of expected *****pa-ke-te-ri-ja***, yet this example is problematic as noticed by Palmer (apud Ventris and Chadwick 1973: 581).

(3) Word-final consonants are always omitted: e.g. *i-ja-te* /iātē**r**/ ‘physician’.

Exceptional spellings are documented, of course, but they should be considered individually and in context. For our current purposes, this is not necessary.[809]

Scribes using the Cypro-Greek syllabary followed a set of orthographic conventions that was more complex than the Mycenaean one, with four basic rules:[810]

(1) If in a word-medial cluster C_1 is a coronal nasal [n], then C_1 is omitted (“partial” spelling): *ke-re-o-**t**o-se* /Kreo**nt**os/ ‘MPN (genitive)’.[811] See rule (2.2) for the bilabial nasal /m/.

(2) Other word-medial clusters are spelled in one of two ways, also depending on their relative position within the “Hierarchy of Orthographic Strength”:

Stops /t, t^h, d, p, p^h, b, k, g, k^h/ > affricates /dz/ > fricatives /s/ > nasals /m, n/ > glides /w, j/ > liquids /l, r/

(2.1) If $C_1 \geq C_2$, then the cluster is broken by separating the two consonants with a “dead” vowel that is taken from the following syllable (“progressive spelling”): e.g. *lu-sa-**to-ro*** /Lusan**dr**ō/ ‘MPN (genitive)’.[812]

(2.2) If $C_1 < C_2$, then the cluster is broken by separating the two consonants with a “dead” vowel that is taken from the preceding syllable (“regressive spelling”): e.g. *a-r**i-si-t**o-ke-re-te-se* /Ari**st**okretēs/; *ta-i-k**o-lo-k**i-a-i* /tāi Go**lg**iāi/ ‘The Golgian (goddess)’.[813] This includes instances where C_1 is /m/, e.g. *n**u-mu-p**a-i* /nu**mp^h**ai/, but not without exceptions.[814]

(3) Word-initial clusters can only be spelled with progressive spelling as in the rule in (2.2): e.g. ***po-ro**-to-ti-mo* /**Pr**ōtotimō/ ‘MPN (genitive)’.[815]

[809] For a list of exceptions, see Woodard (1997: 64-65).
[810] Woodard (1997: 112-132), in B. Davis (2014: 150).
[811] *ICS* 136.
[812] *ICS* 201.
[813] Examples found in *ICS* 261 and 219, respectively.
[814] *Kafizin* 267b has *nu-mu-pa-*, but *Kafizin* 23, 117b and several other late inscriptions from the same site contain the spelling *nu-pa-* (cf. *DGAC*: 154). It is possible that the cause of this variation is not an irregularity of orthography but a phonological process, namely that in the latter cases the bilabial nasal had been dissimilated and nasalized the preceding vowel: [nump^h-] > [nũp^h-].
[815] *ICS* 234.

(4) Word-final consonants are spelled by using a syllabogram containing the consonant in question and a default "dead" vowel *e*: e.g. *e-ta-li-o-n**e*** /Edalio**n**/ 'Idalion'.[816]

The Linear A script is partially undeciphered, but some Minoan lexical material that survives in Linear B and 1st millennium BCE Greek gives us at least some hints of probable Minoan strategies for spelling consonant clusters, all to be treated with restraint:

(1) LA *su-**ki-ri**-ta* > LB *su-ki-ri-ta* /Su**gr**ita/ = Σύβριτα suggests that a stop-liquid cluster ($C_1 > C_2$) is separated with a "dead" vowel taken from the following syllable ("progressive spelling"). This rule would be unsurprising for Linear A, as it is used in Linear B and Cypro-Greek as well.

(2) If correctly identified, LA *pa-i-**t**o* > LB *pa-i-to* /P^{h}ai**st**os/ = Φαιστός suggests that a fricative-stop cluster ($C_1 < C_2$) is spelled by omitting C_1 ("partial" spelling). This rule would thus be shared by Linear A and B, but different from the strategy of Cypro-Greek.

(3) LA *(j)a-d**i-ki-t**e-te-*, where the string *-di-ki-te-* possibly equates with LB *di-ka-ta* = Δίκτη 'Mount Dikte', to be considered alongside LA *ja-d**i-ki-t**u*, possibly comparable to LB *di-ko-to* */Diktos/ 'MPN'. These could be instances where a stop+stop cluster ($C_1 = C_2$) is broken by an empty vowel taken from the preceding syllable (regressive spelling). If this case is correctly interpreted, then it is unexpected, as it is not shared by Linear B nor Cypro-Greek, where progressive spellings of $C_1 = C_2$ clusters are the rule.

(4) LA *d**i-di-k**a-se* > LB *di-ta-ka-so* /Di**t**$^{(h)}$**k**$^{(h)}$asos/(?) is an even more complicated case. We cannot be sure there was a true cluster involved, but even if there were, it is would still be uncertain whether LA *d* represents a stop or a fricative (see 3.2.3.2.1). What we can do is take note of the possible scenarios. If Davis is right and a fricative-stop cluster [θk] ($C_1 < C_2$) is involved, then the use of regressive spelling is unexpected in comparison with the *possible* partial spelling of [st] in LA *pa-i-to*. Conversely, if a stop-stop cluster [dg] or /dk/ > [tk] ($C_1 = C_2$) is involved, then the strategy would agree with the one implied by LA *(j)a-di-ki-te-te-* and *ja-di-ki-tu*. As a third option, as Davis duly notes, it is possible that LB *di-ta-ka-so* reflects /Dit$^{(h)}$ək$^{(h)}$asos/, as LB *a* could be spelling a schwa [ə].[817] In this case, LA *i* might also stand for a short vowel or schwa. All in all, this case is isolated and too ambiguous to be meaningful.

[816] *ICS* 220.
[817] B. Davis (2014: 268, fn. 1435).

Table 5.2 summarizes the rules for spelling consonant clusters that have been ascertained for Linear B and Cypro-Greek and those pondered very tentatively for Linear A.

Table 5.2: Strategies for spelling consonant clusters in Linear A and B, and Cypro-Greek.

Type of cluster	Linear A	Linear B	Cypro-Greek
Word-initial	?	Partial	Progressive
Medial $C_1 > C_2$	Progressive[??]	Progressive	Progressive
Medial $C_1 = C_2$	Regressive[??]	Progressive	Progressive
Medial $C_1 < C_2$	Partial[??]	Partial	Regressive / Partial (with nasals)
Word-final	?	Partial	With empty *-e*

As already mentioned, a common strategy is the progressive spelling of medial clusters of the type $C_1 > C_2$. The same is true of $C_1 = C_2$, although here the single piece of evidence of Linear A might suggest a different strategy for the Minoan script. The Cypriot Greek syllabary differs from the Mycenaean in three main aspects: (1) consonants are always spelled in word-initial consonant clusters; (2) in medial clusters of the type $C_1 < C_2$ no consonants are omitted, with the exception of nasal [n], and regressive spellings are used; (3) word-final consonants are spelled by resorting to a CV syllabogram with an empty *-e*.

The question is whether these rules are Cypriot innovations developed in either Cypro-Minoan or the Cypro-Greek syllabaries, or whether they reflect (at least partially) a state of things going back to Linear A that was changed by Mycenaean scribes but preserved on Cyprus. Already in 1876, Ahrens proposed that use of signs of the C*e* series to spell final consonants owed to /e/ being the "weakest" vowel, perhaps like a "mute *e*", and this idea is still acknowledged.[818] This proposal seems more sustained than the idea that /e/ was selected because it was the least used vowel in this position.[819] Of course, Ahrens and others after him seem to have had in mind a vowel like the schwa [ə], which is not attested as a phoneme of Cypriot Greek (although it could have existed as an allophone). Thus, very early Hermann (1917) suggested that this orthographic rule was modeled on a language—the one behind the script that inspired Cypro-Greek—that possessed a vowel /e/ that was elided word-finally.[820]

Does Cypro-Minoan provide any clue with regard to its orthographical practices? Discounting doubtful cases and repetitions, the whole corpus features only ten sequences of six or more signs.[821] In comparison, Cypro-Greek, which spells almost

[818] Ahrens (1876: 5), apud *ICS*^{2}: 73, fn. 4 and *DGAC*: 221.
[819] Lejeune apud *ICS*^{2}: 393.
[820] Apud *ICS*^{2}: 73, fn. 4.
[821] CM 1: 27-50-12-05-102-87-13 (ENKO Abou 061); 34-91-23-72-23-82-86 (KALA Arou 001.012); 38-87-87-04-09-69-23 (ATHI Avas 001); 38-87-103-23-69-23 (ENKO Arou 001.01); 102-73-04-97-110-73

all consonants, contains 229 sequences of six or more syllabograms.[822] Even taking into account the smaller amount of Cypro-Minoan inscriptions available and possible idiosyncrasies of the language(s) they contain (such as scarcity of long words or significant restrictions to consonant clusters) the Cypro-Minoan statistics seem unlikely to reflect a script that wrote most consonants. A scenario in which the Cypro-Minoan orthography omitted some consonants must therefore be considered a distinct possibility.

5.4 READING RASH ATAB 004

5.4.1 The linguistic and epigraphic ambience of Ugarit: a background

Five different writing systems containing at least eight distinct languages are attested archaeologically at Ugarit. They include different varieties of the Mesopotamian logo-syllabary, used in Sumerian, Akkadian, Ugaritic, Hurrian and Hittite texts; the Ugaritic alphabetic script, used for Ugaritic, Hurrian and even Akkadian; the Anatolian hieroglyphic inscriptions, written in Luwian; objects inscribed in Hieroglyphic Egyptian; and, finally, our Cypro-Minoan inscriptions.[823]

The main textual corpora from Ugarit comprise just three of these languages: texts in the local tongue, Ugaritic have appeared in the highest numbers (between 1,500 and 2,000),[824] followed by those written in Akkadian, the chancellery language of the period (between 700 and 1,000);[825] with fewer texts (ca. 66-81), Hurrian ranks third.[826] Given their extensive use at Ugarit, it is possible that elements of these three languages are concealed, to a greater or lesser extent, in the Cypro-Minoan documents found in the city. Any attempt to read them must therefore take this possibility into account, all the more so as É. Masson, Saporetti and Nahm have all coincided in proposing identifications of Ugarit personal names of Semitic and Hurrian stock, and the results of the following investigation need to be contrasted with their proposals. In what follows, I present a brief overview of Ugaritic and the Akkadian and Hurrian used at Ugarit, considering the affiliation, sphere of use, orthography and phonology of each of these languages.

(ENKO Abou 021); 104-11-24-06-12-23 (ENKO Arou 001.06); 107-11-24-107-27-69-23 (ENKO Arou 001.12-13); CM 2: 79-70-10-75-09-107 (ENKO Atab 002.B.I.10); 104-09-76-104-70-27-21 (ENKO Atab 002.B.I.26); CM 3: 102-75-51-55-82-21-09 (RASH Atab 004.B.16) (cf. Appendix B).

[822] Personal count based on the wordlist of *DGAC*: 987-999.

[823] Bordreuil and Pardee (2009: 8).

[824] Huehnergard (2012: 1): "over 1,500". Bordreuil and Pardee (2009: 8): "about 2,000".

[825] Streck (2011: 377): "700-800"; Huehnergard (1989: 1): "over 960". Differently, Bordreuil and Pardee (2009: 8): "more than 2,500".

[826] Vita (2013: 204, fn. 8) with references.

5.4.1.1 Ugaritic

This is the modern name given to the West Semitic language spoken at Ugarit, which was rediscovered in 1928 and deciphered shortly after. The Ugaritic corpus of texts belongs to a relatively brief period, from ca. 1300 BCE to the destruction of the city ca. 1185 BCE. The texts, in their majority very short, cover a wide fan of genres: epic poems, mythological and divination texts, letters, school exercises, among others.[827] The classification of Ugaritic within the Semitic linguistic family remains much debated, the two main views being that it is either a member of the Canaanite branch or an independent offshoot of Northwest Semitic, deriving an old Amorite dialect.[828]

Although Ugaritic is occasionally attested in the logo-syllabic Akkadian script,[829] in the main it was written in a unique script, which albeit being technically cuneiform (i.e. inscribed with three-dimensional wedged shapes), typologically it is in fact a consonantal alphabet or *abjad*. Three varieties of this alphabet are attested: the 30-letter "long alphabet" well-attested by abecedaries using a letter order mostly matching that of the Phoenician abjad; the rarely attested "short alphabet", of uncertain composition; and a South Semitic type alphabet known from two abecedaries, one from Ugarit and another from Beth-Shemesh in Palestine. Nevertheless, the vast majority of texts written in the Ugaritic language use the so-called "long-alphabet".[830]

Table 5.3 summarizes the sound system of Ugaritic and how it is conveyed by the long consonantal alphabet. The main area of debate regarding the phonology of Ugaritic concerns the sibilants (the same is true of Proto-Semitic and most of the ancient languages of the family[831]), hence the divergent interpretations in Table 5.3. For our current purposes, it suffices to say that a major point of dispute is the interpretation of *t̲* and *d̲*. Traditionally, they are seen as non-sibilant coronal fricatives, respectively /θ/ and /ð/, because in Ugaritic words they mostly derive from reconstructed Proto-Semitic **θ* and **d̲*. In the same framework, *s* and *z* would stand precisely for /s/ and /z/. However, there are typological and transcriptional clues suggesting that non-sibilant *t̲* and *d̲* had already shifted to sibilant /s/ and /z/ by the time of our texts, whereas *s* and *z* would actually represent sibilant affricates, /ʦ/ and /ʣ/ respectively. Evidence includes, but is not limited to, the fact that Hittite words with syllabic cuneiform *š*, universally interpreted as a sibilant fricative, are rendered in Ugaritic with *t̲* (e.g. Ugaritic *t̲pllm* and *ht̲* = Hittite *Šuppiluliuma-* and *Ḫattuša-*), occasionally with *š*, but never with *s*.[832]

[827] Pardee (2011: 460); Huehnergard (2012: 1-6).
[828] See Kogan (2011b: 248), Huehnergard and Rubin (2011), and Pardee (2011: 460-461) with references.
[829] Huehnergard (2008).
[830] Pardee (2008: 7); Bordreuil and Pardee (2009: 21).
[831] Cf. e.g. the discussion in Kogan (2011a), with references.
[832] Recently, see the discussion in Tropper (2012: 108-113 and *passim*), who concludes that the non-sibilant /θ/ and /ð/ are more likely, and Yakubovich (2009, unpublished), who argues for the sibilant interpretation of *t̲*. Tropper's view seems unlikely from the perspective of typology. Depending on the view, Ugaritic had four or six sibilant sounds. Of the 194 *UPSID* languages with four or more sibilants, none lacks /s/. Tropper (*ibid*.: 43-44) seems to assume that Ugaritic had *t̲* = /θ/, *š* = /ʃ/ and s = /ʦ/, but then

Rather, the Ugaritic letter *s* is reserved for Hittite *z*, which is interpreted—again broadly—as an affricate /ʦ/.

Table 5.3: The signs of the "Long" Ugaritic alphabet and its sounds.[833]

Sign	Translit.	Phonetic interpretation	Sign	Translit.	Phonetic interpretation
	ȧ	/ʔa/		*ḏ*	/ð/ or /z/
	b	/b/		*n*	/n/
	g	/g/		*ẓ*	/θˀ/[(?)] [834]
	ḫ	/x/		*s*	/s/ or /ʦ/
	d	/d/		*ʕ* ~ *ʿ*	/ʕ/
	h	/h/		*p*	/p/
	w	/w/		*ṣ*	/sˀ/
	z	/z/ or /ʣ/		*q*	/kˀ/
	ḥ	/ħ/		*r*	/r/
	ṭ	/tˀ/		*ṯ* ~ *θ*	/θ/ or /s/
	y	/j/		*ġ* ~ *ǵ*	/ɣ/
	k	/k/		*t*	/t/
	š	/ʃ/		*i̇*	/ʔi/
	l	/l/		*u̇*	/ʔu/
	m	/m/		*ś* ~ *ṡ*	/ʦ/ [835]

5.4.1.2 Ugarit Akkadian

Spoken originally in Mesopotamia from at least the mid-3rd millennium BCE, Akkadian features in this survey because in the Late Bronze Age it was used as an interregional

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the latter changed to /s/ in some positions, prompting the adoption of the letter *ś* for foreign /ʦ/. This again seems too complex a description for documentation that covers only ca. 120 years of the language.

[833] Based on Pardee (2008: 8-9) and Tropper (2012: 13-204).

[834] Tropper interprets *ẓ* as an "emphatic interdental [fricative]" of "voiced" articulation, which Pardee (2008: 8) notates as /ðˀ/. However, since ejectives or glottalized consonants are inherently voiceless (conversely, pharyngealization leads to voicing; cf. Arabic ḏ = /ðˤ/), /θˀ/ would seem like a more accurate description. But even the latter seems unlikely on the typological level: *UPSID* includes only one language with two glottalized fricatives, Soqotri (Semitic), and they are /sˀ/ and /ʃˀ/. Ugaritologists usually assume that *ẓ* was voiced because some words which etymologically ought to contain this sound are spelled with *ġ* = /ɣ/ (Huehnergard 2012; Tropper 2012: 94, 114-115). Thus, *ġ* = /ɣ/ and *ẓ* must have had allophones whose articulation was close or altogether merged. Whatever might be the case, the interpretation of this letter is not of consequence for the analysis in this thesis.

[835] Ugaritic *ś* functions like *s* (most likely /ʦ/), but it is only used for some words (Pardee 2008: 8), presumably loanwords from other languages, often interchanging with s. Tropper (2012: 43-44) suggests this may have been so because original Ugaritic *s* = /ʦ/ deaffricated to /s/, at least word-initially, and no longer was an optimal choice for foreign /ʦ/.

language. It is thus attested at numerous sites outside its original area, particularly in the Levant (including Ugarit), Anatolia and Egypt. State correspondence written in syllabic cuneiform Akkadian was sent from Alasiya/Cyprus to Egypt (14th century BCE) and Ugarit (late 13th or early 12th century BCE). The Middle Babylonian dialect or dialects of Akkadian found in the extra-Mesopotamian texts is termed "Peripheral Akkadian".[836]

Besides expected interference from Ugaritic, the variety found in the Akkadian texts (strictly) written at Ugarit has a small number of peculiar features, some orthographic and morphological, but mostly concerning the vocabulary and idioms employed.[837] Phonologically, it is not too distinct from other Late Bronze peripheral dialects of Akkadian (see Tables 5.4-5.5): it features loss of word-final mimation (e.g. *šarru* 'king' for *šarrum*), widespread deletion of initial *w*- and assimilation of nasals to a following consonant, and some unusual vocalisms, among several other characteristics.[838]

Table 5.4: Consonantal inventory of Peripheral Akkadian.[839]

	Bilabial	**Labialized**	**Coronal**	**Post-alveolar**	**Palatal**	**Velar**	**Glottal**
Nasal	*m*		*n*				
Stop	*p* *b*		*d* *t* *ṭ* = /tˀ/				
Fricative	*k* *g* *q* = /kˀ/		*š* = /s/ or /s̱/[840]			*ḫ* = /x/	*ʾ* = /ʔ/
Affricate			*s* = /ts → s/ *ṣ* = /tsˀ/ *z* = /dz/				
Approximant		*w*	*l*		*y* = /j/		
Trill			*r*				

[836] Huehnergard (2005: xxv). For the Akkadian of the Alasiyan letters see Cochavi-Rainey (2003).
[837] Huehnergard (2011: 283-284); Streck (2011: 377). For number of texts found, but not necessarily produced at Ugarit see 5.4.1.
[838] Cf. Huehnergard (2011: 99-122).
[839] Kogan (2011); Streck (2011: 335-338, 373-374). The affricate interpretation of the coronal sibilant triad *s*, *z* and *ṣ* is now "generally accepted" (Kogan 2011: 66-67).
[840] The old IPA symbol /s̱/ is used here for a voiceless "hissing-hushing" sibilant (cf. Kogan 2011: 69), i.e. a tongue-down laminal alveolar /s/.

Table 5.5: Vocalic inventory of Peripheral Akkadian.[841]

Vocalic series used in spelling	Phonemes
a	/a, ā/â/
e	/e, ē/ê/
i	/i, ī/î/
u	/u, ū/û/

The cuneiform syllabary of Ugarit Akkadian is based on an Old Babylonian core with a combination of Middle Babylonian sign values, some Assyrian features, a heavy oscillation in the representation of stops and (to a lesser extent) sibilants, alongside other minor features. This is much the case of other Akkadian corpora from northern Syria and Anatolia in the second half of the 2nd millennium BCE.[842]

5.4.1.3 Hurrian

Hurrian is a non-Semitic, non-Indo-European language that was spoken across vast areas of Eastern Anatolia, Syria and Mesopotamia. Its only known relative is Urartian, an Iron Age language used in parts of the Caucausus and Upper Mesopotamia, and efforts to link these two languages to the Northeast Caucasian linguistic family have not met wide acceptance.[843] It is first attested in a small number of words and onomastic elements mentioned in Akkadian sources of the Akkade period (ca. 2300-2100 BCE). The first actual text written in Hurrian is from the dawn of the 2nd millennium BCE and comes from the city of Urkesh (northern Syria), but our major sources for the knowledge of this language date to the Late Bronze Age. We can highlight the predominantly religious texts from the Hittite capital, Hattusa, dated to the period of ca. 1450-1200 BCE; the El-Amarna letter sent by the king of Mitanni, Tušratta, to the Pharaoh Amenhotep III (14th century BCE); and the abovementioned texts from Ugarit (including instructive multilingual lexical lists), written in the local alphabet (ca. 1300-1185 BCE).[844] The status of Hurrian as a spoken language at Ugarit is still a matter of debate, but without doubt it influenced heavily the lexicon of Ugarit and the local onomastic tradition.[845]

With nearly a thousand years of attestations and a wide geographical distribution, Hurrian may have experienced substantial variation, despite the fact that the texts give us the idea of considerable uniformity. The variety of Hurrian that concerns us here is the one *used* in coastal Syria, particularly Ugarit, during the Late

[841] *Ibid*.
[842] Huehnergard (2011: 23ff).
[843] Wilhelm (2008: 81).
[844] Giorgieri (2000: 185-186); Wilhelm (2008: 81).
[845] Vita (2009).

Bronze Age. Written in the local alphabetical script, the Hurrian texts from Ugarit are of difficult interpretation, but as we are investigating the values of signs in the Cypro-Minoan tablet RASH Atab 004, and the latter is likely to contain mostly onomastic material, what concerns us the most is orthography and phonology. The sound system and respective orthographies (alphabetic and syllabic) of Hurrian are shown in Tables 5.6 (consonants) and Table 5.7 (vowels).

Table 5.6: The consonants of Hurrian and their spelling.[846]

Phoneme	**Allophones (Voiceless ~ voiced)**	**Ugaritic alphabetical spelling (Voiceless ~ voiced)**	**Syllabic spelling (Voiceless ~ voiced)**
/m/	[m]	*m*	*m*
/n/	[n]	*n*	*n*
/l/	[l]	*l*	*l*
/r/	[r]	*r*	*r*
/P/	[p] ~ [b]	*p* ~ *b*	*p* ~ *b*
/T/	[t] ~ [d]	*t* ~ *d*	*t* ~ *d*
/K/	[k] ~ [g]	*k* ~ *g*	*k* ~ *g*
/F/	[f] ~ [v]	*p* ~ *b*/*w*	*p* ~ *b*/*w*
/ʃ/ or /s/	[ʃ] ~ [ʒ] or [s] ~ [z]	*ṯ* ~ *ḏ*/*z*	*š* ~ *š*/*z*
/s/ or /ʦ/	[s] ~ [z] or [ʦ] ~ [ʣ]	*s*/*ś*	*z*/*s*
/ʦ / or /$ʦ_2$/	[ʦ] ~ [ʣ] or [TS_2]	*z*	*s*
/X/	[x] ~ [ɣ]	*ḫ* ~ *ġ*	*ḫ*

Table 5.7: The vowels of Hurrian and their spelling at Ugarit.[847]

Alphabetical spelling	**Syllabic spelling (vocalic series)**	**Phonemes**
ʾa	*a*	/a/
ʾi, ʾa	*e, i*	/e/
ʾi	*i*	/i/
ʾu(?)	*u*	/o/
ʾu	*u, ú*	/u/

[846] Based on Dietrich and Mayer (1999), Giorgieri (2000: 180-187; 2013), Wagner (2007: 43-47), Wilhelm (2008: 84-85) and Yakubovich (2009, unpublished). The table encompasses the spelling of Hurrian names in Ugaritic texts. The syllabic transcription of the sibilants is based mostly in the orthography of the Mitanni Letter (14th century BCE). Transcriptional examples from Grøndahl (1967) and *DULAT* were considered.

[847] Based on Wagner (2007: 47-48), Wilhelm (2008: 84-85), Giorgieri (2013), and Vita (2013: 207, n. 20). Transcriptional examples from Grondahl (1967) and *DULAT* were considered.

The interpretation of the Hurrian consonants is fairly consensual among Hurrianists except for the three sibilants. For these, I prefer to follow the scheme of Yakubovich: one fricative /s/, one affricate /ʦ/ and a possible second affricate, which I transcribe for convenience as /ʦ$_2$/. In my opinion, this view is the most economical, as it accounts well for the transcriptional evidence at Ugarit and makes sense. Nevertheless, I would like to emphasize that this choice has no bearing for the analysis of the sign-sequences of RASH Atab 004. Ultimately, each sound is well established and distinguished, regardless of its exact articulation and its spelling in the two cuneiform scripts used at Ugarit: e.g. although here I prefer to notate /s/, it is indisputable that alphabetical *ṯ*/*ḏ* and syllabic *š*/*z* were used for the different pronunciations of a fricative sibilant phoneme, irrespective of its being /ʃ/, /s/, or something else.

5.4.1.4 Personal names at Ugarit

In 1991, van Soldt counted "more than 2600" different personal names "belonging to almost 6000 persons", all reportedly analyzed by Ugaritologists.[848] Not all, of course, belong to the natives of the city. The seminal study of the onomasticon of Ugarit is Grøndahl's (1967) dissertation, but it is now in many aspects outdated, not only because of some shortcomings (e.g. unclear distinctions between West-Semitic and Akkadian names), but also because new material has been published, providing us with new names and new interpretations of old ones.[849] An announced new study by Roche still awaits publication,[850] so for the moment being we rely on Grøndahl's book, the material classified as anthroponymic in Del Olmo and Sanmartín's 2003 *A Dictionary of the Ugaritic Language in the Alphabetic Tradition* (*DULAT*), and several individual publications, many of which by van Soldt.

According to van Soldt, the majority of the personal names documented at Ugarit were West Semitic, the numbers lying between 70 and 90%. This holds for the majority of social and professional groups. The second language from which names were drawn was Hurrian (5 to 30%). Finally, there is a minority of names that is Anatolian (5 to 15%) or of uncertain etymology (approximate percentage not given). The number of unexplained names is particularly high in certain groups, namely the merchants and the *tāriru* ('messengers'?), but this is unsurprising as "many merchants must have come from abroad and staid temporarily at Ugarit".[851] At least some of these foreigners and their names must have been Alasiyot/Cypriot.

[848] Van Soldt (2003a: 683).
[849] Hess (1997); Van Soldt (2003a: 683).
[850] Roche (2001) apud van Soldt (2003: 683, fn. 18).
[851] Van Soldt (2003a: 702-703).

5.4.2 Analyzing the tablet

5.4.2.1 Its context

RASH Atab 004, known in the Ugaritological literature as RS 20.25, was found at the so-called "House" or "Archive of Rap'ānu" in the central part of Ugarit. The building comprised various rooms containing more than 200 documents.[852] Besides RASH Atab 004, there were texts written in Akkadian, Sumerian and Hurrian, as well as objects inscribed in Egyptian hieroglyphic.[853] The cuneiform documentation included seventeen letters addressed to the king of Ugarit from neighboring countries, including Hatti, Amurru, Qadeš, Siyannu and, importantly, Alasiya/Cyprus; other five texts were copies of letters sent, or about to be sent, by the king of Ugarit to the monarchs of Hatti, Egypt and Alasiya/Cyprus. While other types of documents point to scribal activity, particularly learning, Schaeffer defended, based on the presence of international correspondence, that the owner of the facility was more than a mere scribe, probably a councilor to the king who handled the foreign affairs.[854] It was suggested that this was Rap'ānu, the addressee of two letters from Alalaḫ and Karkemiš found in the building, and the beneficiary of a donation by the king Ammištamru II.[855] Smith is right that the amount of international correspondence and lexical texts in different languages stored in the archive play a role in accounting for the presence of RASH Atab 004 in the assemblage and therefore its purpose.[856] However, her suggestion that the tablet is a lexical list is contradicted by the better match between its structure and that of certain name lists from elsewhere in the city, as will be demonstrated in the next section. This does not exclude the possibility of a scribal exercise, which elsewhere I have also defended:[857] the alphabetical tablet RS 22.001, from the northeastern part of the site, contains a list of names with the formula "PN1 son of PN2" but has been interpreted by Ugaritologists as a school text.[858] Utterly, a scribal exercise in the script of Cyprus does not disagree with the essential of Smith's proposal, which links the tablet to scribal tasks that involved "reading, writing, and translating international correspondence".[859]

5.4.2.2 Epigraphical features and internal structure

The interpretation of RASH Atab 004 as a list of personal names was first proposed by Schaeffer, the director of numerous excavation campaigns at Ugarit from 1929 to 1982,

[852] Schaeffer (1968: 638).
[853] Smith (1994: 190).
[854] Schaeffer (1968: 640).
[855] Nougayrol (1968: 42) apud Schaeffer (1968: 640).
[856] Smith (1994: 190)
[857] See Valério (2013a: 22), but notice that the interpretations of Cypro-Minoan signs and sequences offered there are necessarily superseded by the present thesis.
[858] Cunchillos *et al.* (2003: 1728-1729); Hawley (2008: 64).
[859] Smith (1994: 190).

and has been followed by several authors.[860] It is worthwhile reviewing the epigraphical features of the tablet that support this interpretation. A careful structural analysis can already be informative with regard to the type of text, and perhaps even language it conceals.

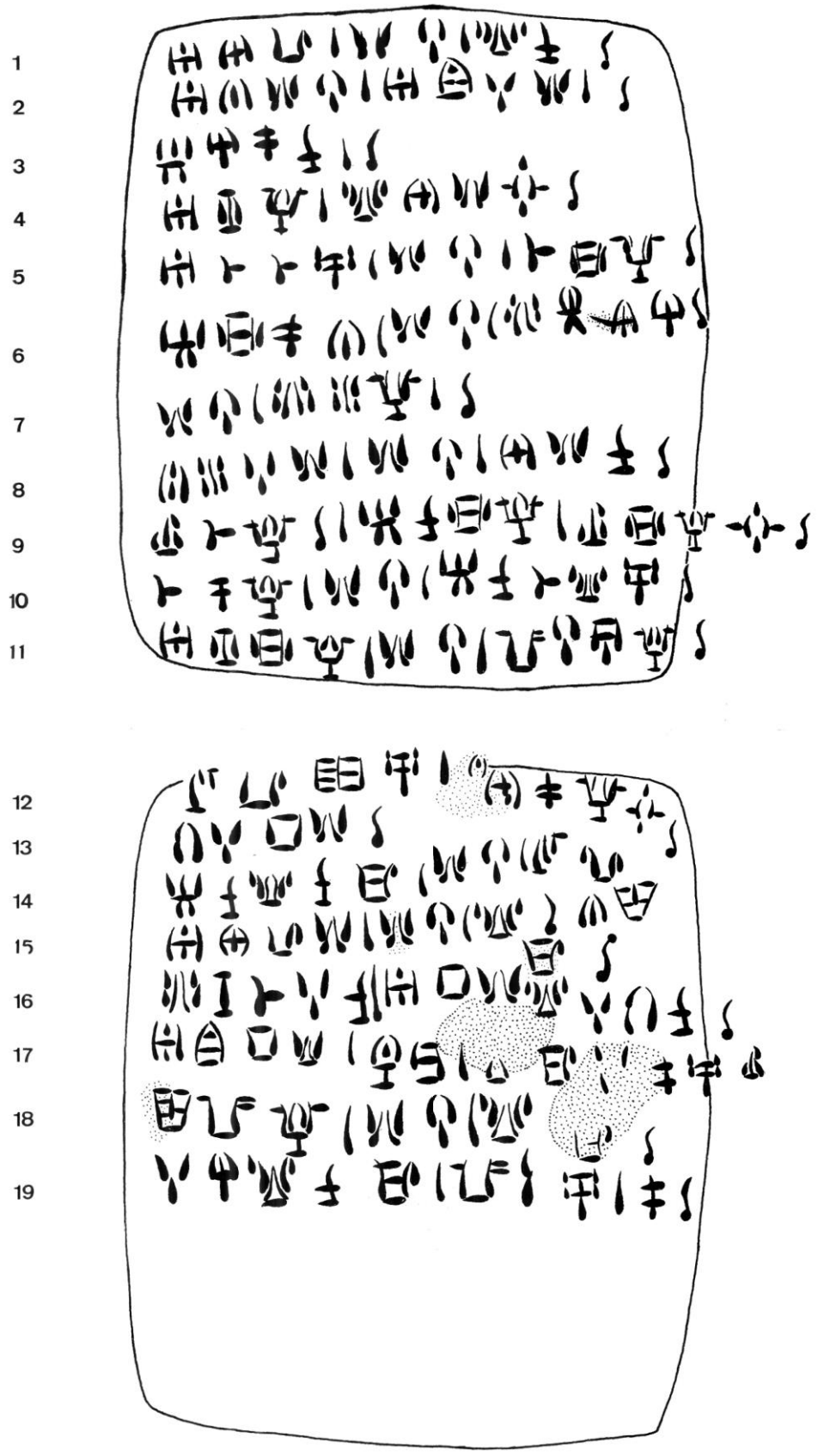
It is not my goal to repeat here a line-by-line analysis of the inscription. This sort of description is already found in the works of O. and É. Masson,[861] and only for small portions of the text do I propose different interpretations, which are argued in detail in Appendix A. The transnumeration of the tablet found in *HoChyMin*, with the limited corrections that have been suggested in the appendix, is provided in Table 5.8.

Table 5.8: Critical transcription of RASH Atab 004.[862]

A.01	102-25-87 | 51-28 | 55-09 ¶
A.02	102-23-51-28 | 102-74-82-51 | ¶
A.03	104-25-06-09 | ¶
A.04	102-02-100 | 55-25-51-40 ¶
A.05	102-04-04-96 | 51-28 | 04-71-100 ¶
A.06	104-71-06-23 | 51-28 | 38-105-23/102-58 ¶
A.07	51-28 | 38-35-100 | ¶
A.08	102-35-82-51 | 51-28 | 25-51-09 ¶
A.09	37b-04-100 ¶ | 104-09-71-100 | 37b-71-100-40 ¶
A.10	04-08-100 | 51-28 | 104-09-04-55-96 ¶
A.11	102-02-71-100 | 51-28 | 92-28-95-100 ¶
B.12	19-87-73-96 | [[••]]25-06-100-40 ¶
B.13	21-82-75-51 ¶
B.14	104-09-55-09-70 | 51-28 | 19-91-73-23 ¶
B.15	102-25-87-51 | 51-28 | 55-70 ¶
B.16	38-01-04-82-09 | 102-75-51-55-82-21-09 ¶
B.17	102-74-75-51 | 27-69 | 55-70-••-06-96-37b ¶
B.18	73-92-100 | 51-28 | 55-70 ¶
B.19	82-25-55-09-70 | 92-11-96 | 06 ¶ or 92 ¦ 96 | 06 ¶

[860] Among others, O. Masson (1969: 381-390), Meriggi (1972a), É. Masson (1973; 1974), Saporetti (1976) and Nahm (1981).
[861] O. Masson (1969: 381-390); É. Masson (1973: 38; 1974: 30-35).
[862] See Appendix A. As in *HoChyMin*, "¶" is used to transcribe the punctuation sign ꞉ (see sections 2.2.1.2, 2.3.23 and 5.6.2.1).

Figure 5.1: Drawing of RASH Atab 004, according to É. Masson.[863]



[863] From É. Masson (1974: figs. 16-17)

The text is discontinuous as each line is of a different length (see Figure 5.1). The use of the "crotchet" mark, probably for different entries, adds to the impression that the tablet contains an enumeration of some sort.[864] Seven types of entry are attested, which are given here by order of frequency:

SEQUENCE + 51-28 + SEQUENCE	A.01, 05, 06, 08, 10, 11; B.14, 15, 18 A.02 (?)	9 or 10x
SEQUENCE + SEQUENCE ending in 40	A.04, 09; B.12	3x
SEQUENCE	A.03, 09; B.13	3x
SEQUENCE + SEQUENCE	A.02 (?); B.16	1 or 2x
51-28 + SEQUENCE	A.07	1x
SEQUENCE + SEQUENCE + SEQUENCE	B.17	1x
SEQUENCE + SEQUENCE + SIGN or SEQUENCE + SIGN + SIGN + SIGN	B.19	1x

Notice, however, that two of these, SEQUENCE + 51-28 + SEQUENCE made 51-28 + SEQUENCE may be variations of the same construction. The type of entry in the last line of the tablet (B.19) is ambiguous, as the reading of the of the signs is uncertain.

Comparing the structure of RASH Atab 004 with that of numerous other administrative documents from Ugaritic, É. Masson made plausible interpretations, as follows:

SEQUENCE + 51-28 + SEQUENCE	'PN1 son of PN2'	9 or 10x
SEQUENCE + SEQUENCE ending in 40	'PN + toponymic adjective'	3x
SEQUENCE	'PN'	3x
51-28 + SEQUENCE	'son of PN'	1x
Lines B.17-19	Colophon	

For Masson, it is no coincidence that in three cases, after the first sign-group, a sequence ending in -40 appears where in the majority of cases we find 51-28 + SEQUENCE. She interpreted this as a substitution of the patronymic construction for a toponymic one,[865] something seen often in the Ugaritic documentation. Likewise, 51-28 + SEQUENCE would be a variant of SEQUENCE + 51-28 + SEQUENCE, whereby only the formula 'son of PN' was used. An examination of the Ugaritic documentation corroborates Schaeffer's proposal and É. Masson's development of it. Alphabetical

[864] O. Masson (1969: 380); É. Masson (1973; 1974).
[865] É. Masson (1974: 42).

Ugaritic texts with entries that are structurally similar to those of RASH Atab 004 include RS 8.201 = RS 8.183, RS 9.469 and RS 11.840 (for the first and the latter, see Table 5.9), found at different parts of Ugarit.[866]

Table 5.9: Ugaritic texts RS 8.201 and RS 11.840.[867]

RS 8.201 = RS 8.183, ll. 5-16			**RS 11.840, ll. 2-8**		
	(…)			(…)	
5	*mnn . bn . krmn*	M. son of K.	2	*bn . mnyy . šʕrty*	The son of M., from Šaʕartu
6	*bn . umḫ*	Son of U.	3	*aryn . aḏddy*	A. from Ashdod
7	*yky . bn . slyn*	Y. son the S.	4	*agpṯr*	A.
8	*ypln . bn . ylḥn*	Y. son of Y.	5	*šbʕl . mlky*	Y. from Mulukku
9	*ʕzn . bn . mlk*	*ʕzn* son of the king(?)	6	*nʕmn . mṣry*	N., the Egyptian
10	*šrm*	Š.	7	*yʕl . knʕny*	Y. the Canaanite
11	[*b*]*n . špšy*[*n*]	Son of Š.	8	*gdn . bn . umy*	G. son of U.
12	[*b*]*n . ḫrmln*	Son of H.			
13	*bn . tnn*	Son of T.			
14	*bn . pndn*	Son of P.		(…)	
15	*bn . nqq*	Son of N.			
16	*ḥrš . bhtm*	Craftsmen of the Palace			
	(…)				

These documents contain entries of the types WORD + REPEATED DISSYLLABIC WORD + WORD, REPEATED DISSYLLABIC WORD + WORD and WORD + TOPONYMIC ADJECTIVE IN *-Y*. What is significant in them is that the WORDS are mostly personal names and the REPEATED DISSYLLABIC WORD is *bn* 'son'. This contradicts Smith's suggestion that RASH Atab 004 contains a "grammatical or vocabulary list"[868] and supports instead the interpretation of it as a list of persons with patronymics and toponymic adjectives, accepted continuously since 1969.

5.4.2.3 Possible languages

For reasons of historical plausibility, languages not spoken natively in Late Bronze Age Syria and Cyprus, namely Egyptian (Egypt), Hittite and Luwian (Anatolia), and Sumerian (Mesopotamia), are unlikely to be contained in a document written in a

[866] See Cunchillos *et al*. (2003: 742-744, 759, 865).
[867] *KTU* apud Cunchillos *et al.* (2003: 742-744, 865). See the latter for the reading of the ninth line of RS 8.201.
[868] Smith (1994: 189-190).

Cypriot script and found in a Syrian city. As we have seen in 5.4.1, the languages of wider written use at Ugarit were Ugaritic, Peripheral Akkadian and Hurrian. Alongside the unknown native language(s) of Cyprus, these are the default candidates for the language of RASH Atab 004. Drawing on the well-established type of entry WORD + DISSYLABIC WORD + WORD, associated with some kind of listing, the following preliminary survey aims to see whether some of these candidates are incompatible with such structuring and, therefore, can be eliminated as the language of our tablet.

5.4.2.3.1 Possibility 1: Cypriot

The sequence 51-28 is not attested in any Cypro-Minoan inscription besides RASH Atab 004. At least some occurrences of a word for 'son,' patronymic constructions, or both, could be expected in a corpus which most authors agree must contain a good deal of ownership inscriptions, including personal names. It is noteworthy that Eteocypriot contains patronymic constructions with a suffix *-o-ko-o-* (see 5.2): PN1 PN2-*o-ko-o-* 'PN1 son of PN2'. Naturally, this does not mean that the language of RASH Atab 004, which seems to use a different construction, cannot be Cypriot. Even if some Cypro-Minoan texts employed a language related to Eteocypriot, the possibility of Cypriot multilingualism in the Late Bronze Age cannot be discarded. Crucially, because languages change, even a tongue related to Eteocypriot might have had ways of expressing parenthood different of those of 1st-millennium Eteocypriot. Ultimately, what is significant is the thorough absence of 51-28 from documents found on Cyprus.

5.4.2.3.2 Possibility 2: Hurrian

In considering Hurrian patronymic constructions we need to distinguish those found in actual Hurrian texts and those found in lists of names written in Akkadian.

In Hurrian texts we find two kinds of construction.[869] In the first, found in literary contexts, the modified noun takes position before the modifier (genitival) noun:

(1) Hattusa, Anatolia ("The Song of Release" KBo XXXII 15 Rs. IV 16-17)[870]

Cuneiform spelling	*wu$_{ú}$-ut-ki-iš* ^{m}*Wa$_{a}$-a-za-ni-ga-ar-wa$_{a}$-aš* ^{m}*Za-a-za-al-la-aš*
Normalization	*fut=ki=ž Fāzanigar=wa=ž Zāzalla=ž*
Phonological interpretation	/futkiz Fādzanigarvaz ^{D}Zādzallaz/
Translation	"The son of Fāzanigar, Zāzalla."

[869] I thank M. Giorgieri (pers. comm.) for his helpful referrences to this respect. All errors and shortcomings in the account that follows are mine.
[870] Neu (1996: 296).

Notice that this construction involves a well-known grammatical phenomenon known as *Suffixaufnahme* or "double case-agreement", whereby the grammatical case ending of the head noun (namely the ergative, marked by *-š* /-z/) is extended to the genitival one.[871]

The second type of patronymic phrasing features the reverse situation, with the head noun taking position after the genitival noun. This occurs, for example, in the letter sent by Tušratta, the king of Mitanni, to the Egyptian Pharaoh:

(2) The Mittani Letter (El-Amarna EA 24, III 103-104)[872]

Cuneiform spelling	^{MUNUS}*Ta-a-du-ḫé-e-pa-an ...* ^{m}*Du-uš-rat-ta-a-we ... ša-a-la*
Normalization	*Tadu-Ḫeba=n*(*na*) *... Tušratta=ve ... šala*
Phonological interpretation	/Taduɣeban ... Tuzrattave ... sala/
Translation	"Taduḫeba ..., of Tušratta ... the daughter."

Finally, some texts from sites like Nuzi (northeastern Mesopotamia, near the Tigris) or Alalaḫ (northwestern Syria) contain simple lists of personal names, of the type we expect for RASH Atab 004, with the pattern "PN_1 son of PN_2". However, these are written in the Akkadian language[873] and accordingly the word for 'son' is spelled with the cuneiform Sumerogram DUMU. Even though the latter conceals the actual word employed, we can assume these lists use Akkadianizing formulae.

In conclusion, the Hurrian constructions are inconsistent with the structure of RASH Atab 004 because the word for 'son' would take position before or after the subject and the genitival noun, not in the middle. An equally important impediment is that, as far as we can infer, the word for 'son', /fut=ki/,[874] would have to be spelled with three syllabograms, approximately as ***pu-ti-ki* or ***wu-ti-ki*, as the two deciphered Aegean-Cypriot syllabaries coincide in spelling consonants in clusters of the type [STOP+STOP] with the "progressive" rule (see 5.3). Thus, the Hurrian word for 'son' is incompatible with the sequence 51-28.

5.4.2.3.3 Possibility 3: Ugarit Akkadian

Akkadian has two ways for expressing genitival relationships, as seen in the following examples:[875]

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[871] Wilhelm (2008: 102).
[872] Example according to Wegner (2007: 198).
[873] Despite the fact that the dialect of Nuzi is so heavily influenced by Hurrian to the point where scholars refer to it as "Hurro-Akkadian" (Giorgieri 2000: 178-179).
[874] There is another Hurrian word for 'child', *hani*, but its primary meaning is 'newborn' as deduced from a trilingual vocabulary list from Ugarit (RS 94.2939) where it is glossed with Akkadian *šer(r)u* 'baby, young child', not *māru* 'son' (see André-Salvini and Salvini 1998: 6, 11). I thank M. Giorgieri for bringing this to my attention (pers. comm.).
[875] Huehnergard (2005: 7, 10-11, 55-56).

(1) governing noun + determinative pronoun *ša* + governed noun (in the genitive)
e.g. *šarratu ša mati* "the queen of the land" [876]

(2) governing noun (in construct form) + governed noun (in the genitive)
e.g. *šarrat mati* "the queen of the land"

Thus, there are two ways of expressing parental relationships in Akkadian:

(1) PN_1 *mārū ša* PN_2(gen.)
"PN_1 son of PN_2"

(2) PN_1 *mār* PN_2(gen.)
"PN_1 son of PN^2"

Construction (1) with the demonstrative pronoun *ša* would require four words and is incompatible with formulae of the kind (SEQUENCE +) 51-28 + SEQUENCE. In theory, only construction (2), with the word *mār* 'son' in its construct form, would be possible if Akkadian were the language of RASH Atab 004. But if this was the case, then in Cypro-Minoan 51-28 the word-final /-r/ of *mār* would necessarily appear spelled with an empty vowel: **ma-r*(V). In conclusion, Akkadian could be the language of RASH Atab 004.

5.4.2.3.4 Possibility 4: Ugaritic

In Ugaritic, the genitival constructions conform to a scheme where the modified noun, in the construct state, precedes the modifier, in the genitive case:[877]

mlk qrt
/malku qarīti/
"The/A king of the/a city"

Our knowledge of Ugaritic, especially of its vocalization, is rather hampered by its use of a consonantal alphabet. However, evidence from syllabic spellings (in the Mesopotamian logo-syllabary) seems to indicate that, unlike Akkadian and Hebrew, but like Arabic, the construct forms of the head noun in genitive phrases maintain the

[876] The regular genitive case-ending of singular nouns in Akkadian is *-im*, but from the late Old Babylonian period (conventionally ca. 1595 BCE) onwards, word-final mimation was lost and the ending became *-i* (see Huehnergard 2005: 7, 589 and section 5.4.1.2 above).
[877] Example taken from Pardee (2008: 13) and Bordreuil and Pardee (2009: 32).

nominative case-vowels in Ugaritic.[878] Thus, a parental relationship would be expressed as follows:

> 'son' (construct) + noun (genitive)
> *bn mlk*
> /binu malki/
> "(The/A) son of (the/a) king" [879]

Notice also the examples in the Ugaritic texts shown in Table 5.9.

As a result, the grammatical construction and dissyllabic structure of /binu/ make it *possible* that Ugaritic is the language of RASH Atab 004. We would expect a dissyllabic spelling of /binu/, such as ***bi-nu* (the default assumption of É. Masson[880]) or similar. The pronunciation of this Ugaritic word is addressed in more detail in 5.4.2.4.1.

5.4.2.4 Transliteration and analysis

Once we have placed RASH Atab 004 in its context and detailed what can be known about its contents independently from any attempted reading, we can proceed with the experiment of applying the sign values hypothesized in Chapters 3 and 4 to the tablet as transnumerated above (Table 5.8). As we have seen, this transnumeration is essentially the one given in *HoChyMin*, but includes the few corrections proposed in Appendix A. The result is the transliteration shown in Table 5.10.

The second step is to proceed to a thorough analysis of the sign-sequences revealed. The study is performed in five stages. Stage 1 deals with sequences which can at this point be transliterated in full with the values hypothesized in the previous chapters, while Stages 2-5 investigates the remaining sequences by means of a combinatorial analysis, i.e. untransliterated syllabograms and signs whose value is extremely tentative will be assigned values that produce identifications of words according to a principle of economy. Stage 5 concerns sequences that include damaged signs or signs whose reading (in the epigraphical sense) is doubtful, therefore constituting the most problematic cases. Their value as evidence is considered very limited.

It is important to note that these corrections concern only the three sequences containing the controversial form CM 58 (*i*[?]-*ka*[??]-*pa*[??]-*li*[?] in line A.03, *e*[?]-*105-*ti*/*a*[?]-*ka*[??] in A.06, and *sa*[??]-*ka*[??]-*ma*[??]-*li*[?]-*ki*[??] in B.19), the first sign of *a*[?]-*wi*$_2$[??]-*sa*[??]-*pi*[??] in line

[878] Sivan (1984: 82-83; Pardee (2008: 13); Bordreuil and Pardee (2009: 31-32). The opposing view was held by Zevit (1983), but Pardee points to the refutation by Huehnergard (1987: 300-301).
[879] See *DULAT*: 224-228 on Ugaritic *bn*.
[880] É. Masson (1973: 40, 1974: 39).

A.08, and the latter part of line B.19. They will be of no consequence to the essential results of the analysis (cf. 5.4.2.5).

Table 5.10: Experimental transliteration of RASH Atab 004 with the hypothetical phonetic values of Chapter 4.

A.01	*a*[?]-*ka*[??]-*la*[?] | *pi*[??]-*lu*[?] | *ma*[??]-*li*[?] ¶
A.02	*a*[?]-*ti*[?]-*pi*[??]-*lu*[?] | *a*[?]-*wi*[??]-*sa*[??]-*pi*[??] | ¶
A.03	*i*[?]-*ka*[??]-*pa*[??]-*li*[?] | ¶
A.04	*a*[?]-*ne*[??]-*ni* | *ma*[??]-*ka*[??]-*pi*[??]-*40 ¶
A.05	*a*[?]-*ta*[??]-*ta*[??]-*ri*[?] | *pi*[??]-*lu*[?] | *ta*[??]-*71-*ni*[?] ¶
A.06	*i*[?]-*71-*pa*[??]-*ti* | *pi*[??]-*lu*[?] | *e*[?]-*105-*ti*/*a*[?]-*ka*[??] ¶
A.07	*pi*[??]-*lu*[?] | *e*[?]-*wi*$_2$[??]-*ni*[?] | ¶
A.08	*a*[?]-*wi*$_2$[??]-*sa*[??]-*pi*[??] | *pi*[??]-*lu*[?] | *ka*[??]-*pi*[??]-*li*[?] ¶
A.09	37*b*-*ta*[?]-*ni*[?] ¶ | *i*[?]-*li*[?]-*71-*ni*[?] | 37*b*-*71-*ni*[?]-*40 ¶
A.10	*ta*[??]-*na*[??]-*ni*[??] | *pi*[??]-*lu*[?] | *i*[?]-*li*[?]-*ta*[??]-*ma*[?]-*ri*[?] ¶
A.11	*a*[?]-*ne*[??]-*71-*ni*[?] | *pi*[??]-*lu*[?] | *92-*lu*[?]-*wa*[?]-*ni*[?] ¶
B.12	*u*[?]-*la*[?]-*mo*[??]-*ri*[?] | [[*ti*]]*ka-pa-ni*-*40 ¶
B.13	*ko*[??]-*sa*[??]-*ra*[?]-*pi*[??] ¶
B.14	*i*[?]-*li*[?]-*ma*[??]-*li*[?]-*ki*[??] | *pi*[??]-*lu*[?] | *u*[?]-*mi*[??]-*mo*[??]-*ti*[?] ¶
B.15	*a*[?]-*ka*[??]-*la*[?]-*pi*[??] | *pi*[??]-*lu*[?] | *ma*[??]-*ki*[??] ¶
B.16	*e*[?]-*we*$_2$[??]-*ta*[??]-*sa*[??]-*li*[?] | *a*[?]-*ra*[?]-*pi*[??]-*ma*[??]-*sa*[??]-*ko*[??]-*li*[?] ¶
B.17	*a*[?]-*wi*[??]-*ra*[?]-*pi*[??] | *si*[?]-*ja*[?] | *ma*[??]-*ki*[??]-••-*pa*[??]-*ri*[?]-*zi*[??] ¶
B.18	*mo*[??]-*92-*ni*[?] | *pi*[??]-*lu*[?] | *ma*[??]-*ki*[??] ¶
B.19	*sa*[??]-*ka*[??]-*ma*[??]-*li*[?]-*ki*[??] | *92-*pe*[??]-*ri*[?] | *pa*[??] ¶ or *92 ḫ *ri*[?] | *pa*[??] ¶

5.4.2.4.1 Stage 1: Sequences with full tentative readings

102-25-87 → *a*[?]-*ka*[??]-*la*[?] (A.01)

The same transliteration was offered by Nahm,[881] who compared it to the Hurrian personal names *a-ga-li-bi* and *aglby*, from Ugarit,[882] and *Aqalaya*, from Nuzi.[883] As

[881] Nahm (1981: 60).
[882] Grøndahl (1967: 216, 245); *DULAT*: 25.
[883] See Gelb et al. (1943: 11).

there is no reason why the last syllable of any of these names would have been omitted from the Cypro-Minoan spelling, neither name is a satisfactory comparandum.

At Ugarit, there are a number of personal names built with the Hurrian element *a/iġl = eḫ(e)li* /eɣ(e)li/ 'emancipated (slave)[(?)]' as first component and a divine name as the second: *aġlḏrm* /Eɣli-Zarruma/, *a/iġlkḏ/z* /Eɣli-Kuzuh/,[884] *eḫ-li-*[d]IM /Eɣli-Tessob/ and [*a/i*]*ġlṯr* /Eɣli-sarri/.[885] At least five attested abbreviated forms of names containing this element are known, as shown in Table 5.11.

Table 5.11: Ugarit shortened names with Hurrian *a/iġl = eh(e)li*.[886]

Alphabetical	**Syllabic**	**Phonological and morphological interpretation**
aġld	*aḫ-la-ti* (gen.)	/Aɣladu/[887]
aġli (gen.)	*a-ḫa-la-e* (gen.)	/Aɣalaʔi/, genitive of /Aɣalaʔu/
aġlmn	*a-ḫal-me-ni* ~ *e*]*ḫ-li-m*[*e*?]-*ni*	/Aɣal/Eġli-meni/, genitive of /Aɣal/Eġli-menu/
aġltn	*a-ḫal-te-nu*	/Aɣaltenu/, hypocoristic of /Aġal-Tesup/(?)
a/iġlyn	*a-ḫal-i*[*a-na*] ~ *a-ḫal-ia-nu*	/Aɣalyānu/, abbreviated form: */Aġal(ā)yu/ + /-ānu/(?)[888]

The form that most resembles *a*[ʔ]*-ka*[ʔʔ]*-la*[ʔ] is /Aɣalaʔu/, attested in the genitive as *aġli = a-ḫa-la-e* /Aɣalaʔi/,[889] but like Hurrian **Aqalaya* it must be excluded because its ending does not match the Cypro-Minoan sequence. Another suffix used in abbreviated names from Ugarit is /-āyu/, which is worth considering because it can be abbreviated to *-ā*. Thus, van Soldt evokes cases like /Niqalāyu/ > /Niqalā/ and /Piddāyu/ > /Piddā/, as well as **Labnā*, possibly an abbreviation of both **Labnāyu* and **Labnānu*.[890] From the existence of *a/iġlyn = a-hal-ia-nu* /Aɣalyānu/ we can infer there was a less extended hypocoristic */Aɣalāyu/, which in turn could have been shortened to */Aɣalā/. This form could well have been spelled as *a*[ʔ]*-ka*[ʔʔ]*-la*[ʔ] in Cypro-Minoan, as we only need to assume that the voiced velar fricative /ɣ/, could be transcribed with the Cypriot *k*-series if the script lacked a better match.

Still, this identification is not secure, as we are dealing with a sequence of only three signs, which increases the likelihood of an accidental match.

[884] Cf. *Eḫ-li-*[d]SIN cited by Gelb et al. (1943: 208) and interpreted thus by Laroche (1966: 226). For the use of the Sumerogram SIN, notice that the Mesopotamian god Sin and Hurrian Kuzuḫ were both lunar deities.
[885] *DULAT*: 29-31, with references.
[886] Based on *DULAT*: 29-31 and van Soldt (2012: 205).
[887] Van Soldt (2010b: 313, n. 61).
[888] For this type of names, see van Soldt (2010b: 317).
[889] For the suffix /-aʔu/, attested in several names at Ugarit, see van Soldt (2010b: 313-314).
[890] Van Soldt (2010b: 312, fn. 42, 314-315).

51-28 → *pi*[??]-*lu*[?] (A.01, 05, 06, 07, 08, 10, 11; B.14, 15, 18)

É. Masson was the first to propose a reading of this sequence. Having assumed it stood for the "mot sémitique *bn*", in a form comparable to *bi-nu*, known from cuneiform syllabic spellings of West Semitic onomastic material such as Mari Amorite, she assigned it the reading *p*/*bi-nu* (in her view the same series represented voiceless and voiced bilabial stops).[891] Saporetti followed the same reasoning, but read CM 28 as *ni* rather than *nu*.[892] Finally, Nahm agreed as per the value of the first syllabogram, but suggested *ru* for the second. Reading 51-28 as *pi-ru*, he hazardously interpreted it as an (Old) Aramaic word for 'son', /birə/. Nahm based his entire argument in a single alphabetical letter found at Ugarit (RS 11.875), wherein allegedly the Aramaic word *bry* 'my son' is found instead of the expected Ugaritic *bny*.[893] However, it is today clear that †*bry* is a scribal mistake for Ugaritic *bny*, and therefore must be amended.[894] Crucially, there is no epigraphical evidence for the use of Aramaic at Ugarit in the 13th and the early 12th centuries BCE.[895] Nahm's interpretation is not to be endorsed. But what, then, can we make of CM 28?

Perhaps Nahm's idea to read the sign as *ru* owes to nothing more than his assumption that 51-28 reflects Old Aramaic *br*, as his formal comparison of CM 28 (𐎟) to CGk *ru* (𐎙) was not as nearly compelling as others.[896] In a similar vein, É. Masson's and Saporetti suggestions of reading CM 28 as *ni* or *nu* seem to have been forced on the sign in order to explain 51-28 as /binu/, yet they would entail a complete paleographical discontinuity: cf. the forms of LA *ni* (𐎑) and *nu* (𐎓), and CGk *ni* (𐎕) and *nu* (𐎖). We can conclude that these readings are all less advantageous than the hypothetical development LA 26/*ru*[??] (𐎘) > CM 28 (𐎟) > CGk *lu* (𐎚), with all the details suggested in section 3.4.5—including the fact that it swares well with the evolution LA *r* > CM *l*[??] > CGk *l* observed in more straightforward cases like LA 02/*ro* > CM 05 > CGk *lo*.

The reading *pi*[??]-*lu*[?] suggested here obviously excludes Akkadian *mār* as comparandum for 51-28,[897] but does resemble Ugaritic *bn* partially. In the construct case, used in genitive relationships, Ugaritologists agree it would have the vowel ending *-u*, hence /binu/. This word is not attested in syllabic form in any document from Ugarit since it was normally written with the Sumerogram DUMU,[898] but its vocalization has been reconstructed[899] on the basis of Akkadian *bīnu* (*bi-in-nu*)[900] and West-Semitic compounded personal names that include the word for 'son': cf. Alalaḫ *bi-n-*/*bi-in-*[901]

[891] É. Masson (1973: 40, 1974: 39).
[892] Saporetti (1976: 102).
[893] Nahm (1981: 59-60).
[894] See Cunchillos *et al.* (2003: 568). For Ugaritic *bny*, see *DULAT*: 226.
[895] See e.g. Creason (2008: 108-109).
[896] Nahm (1981: 56, Abb. 3).
[897] *Contra* Valério (2013a: 18-19).
[898] Grøndahl (1967: 118-119).
[899] Bordreuil and Pardee (2009: 303); Huehnergard (2012: 144).
[900] *CAD* B: 242-243.
[901] Sivan (1984: 212).

and Mari Amorite *bi-n/bi-in-*.[902] The latter must not be confused with the West-Semitic element *bun-* 'creation', also attested at Alalaḫ and Mari.[903] This is a different word, which excludes /bunu/ as a possible vocalization of *bn*.

A word worth considering as a phonographic match for *pi*[??]*-lu*[?] is Peripheral Akkadian *bēlu* 'lord' (its Ugaritic cognate *bʕl* = *ba-a-lu* /baʕlu/ is obviously excluded).[904] However, three immediate reservations make it an implausible candidate. Two are orthographic: the choice of CM 51 = *pi*[??] instead of CM 11 = *pe*[??] would be strange and the Akkadian construct form *bēl*, expected in the construction 'X, lord of Y', would require the *ad hoc* assumption that *-u* represents an "empty" vowel. The third is contextual: while lists with genitive constructions 'X son of Y' are a well-attested genre among the texts of Ugarit, to the best of my knowledge lists of people described as 'owner' or 'ruler' of other people are not. I would therefore exclude Akkadian *bēl* as the word behind *pi*[??]*-lu*[?].

We need to go back to Ugaritic *bn* /binu/. Its most significant difference as regards *pi*[??]*-lu*[?] is the *apparent* use of a Cypro-Minoan *l*[(?)] syllabogram for an Ugaritic coronal nasal /n/. Is there any way to account for it? Two facts need to be considered. The only Cypro-Minoan sign comparable to LA 55/*nu*[??] (𐄪) is CM 68 (𐄫), which so far is attested only in CM 2 and possibly the cylinder seal CYPR? Psce 002. The second fact is that CGk *nu* (𐊐) has no formal counterpart in Cypro-Minoan so far and seems rather like a newly devised sign, inspired by CGk *no* (𐊏) < CM 17 = *no*[?] (𐄩) (see 3.3.3). Combined, these two observations leave room for the possibility that a *nu* syllabogram was absent from late Cypro-Minoan. If already around 1300-1200 BCE such as sign was not part of the signary employed in the writing of RASH Atab 004, then CM 28 = *lu*[??] appears as the obvious alternative. But we need to consider other possibilities.

Phonologically, the articulation of a lateral approximant /l/ is not too distant from a coronal nasal /n/, a proximity which justifies a series of well attested orthographic phenomena in ancient Eastern Mediterranean languages. Perhaps the best known phenomenon is the dissimilation of *l-n* sequences to *l-n*, attested in various languages, including Greek: cf. νάρναξ ~ λάρναξ 'coffer, box'[905] or Hittite *lāman* and Hieroglyphic Luwian *álaman-* 'name' vs. Latin *nōmen* (< PIE ***h*$_3$*neh*$_3$*mn*).[906] On Cyprus, cf. Phoenician *nrnk* (and Greek Ναρνάκιος 'Narnakaean') vs. Λάρνακα 'Larnaca'.[907] Other languages show less well understood cases of blurred distinctions between nasal and lateral coronals, as seen in the adaptation of Sumerian loanwords in Akkadian: cf. e.g. nu.banda$_3$ > *laputtû* 'steward, captain' vs. ^{giš}nu-kuš$_2$-u$_3$ > *nukuššu* 'part of a door'.[908] Likewise, initial /l-/ and /n-/ seem to have interchanged irregularly in

[902] Huffmon (1965: 120-121, 175-176).
[903] *Ibid*.
[904] Huehnergard (2008: 114).
[905] The non-dissimilated form is glossed by Hesychius (ν 88).
[906] Kloekhorst (2008b: 517-518).
[907] *DGAC*: 155.
[908] *CAD* L: 97 and *CAD* N: 332.

Eastern Aramaic (cf. Aramaic *laḥmā* vs. Talmudic *naḥmā* 'bread').[909] In a more systematic way, /l/ and /n/ have been neutralized to /l/ word-initially in modern-day Cantonese.[910] This gammon of examples (and they are not exhaustive) demonstrates that when for some reason /n/ loses the feature [+NASAL] it tends to become articulated as /l/.

There is one more historical case worth mentioning in passing. A number of Phoenician graffiti from Abydos and one from Abu Simbel display eleven instances of interchanging of the letters *n* and *l*, rare outside Egypt: seven examples of *n* > *l* and four of *l* > *n*. The "confusion" is mainly associated with the words *ʔnk* 'I' and *bn* 'son', but we find also *Mnqrt* for the divine name *Mlqrt* 'Melqart' in a personal name.[911] Because one of the authors of the graffiti identified himself as a Cypriot (Phoenicians were one of the populational elements of Cyprus in the 1st millennium BCE), Harris attributed the phenomenon to a "Cypro-Phoenician" dialect, at the same positing that it was "a peculiarity of the substratum of Cyprians who learned Phoenician and (…) in many cases substituted it in their own sounds".[912] Harris' claim might seem tantalizing as a parallel to our potential Cypro-Minoan rendering of Ugaritic /n/ as *l*. However, beyond the trivial cases of *n-n* > *l-n* dissimilations, the confusions seen at Abydos are not prolific on Cyprus, nor outside Egypt, for that matter. Calabro, who notices that some graffiti favor only *n* and others only *l*, speaks of "phonological influence from Egyptian", in which [l] and [n] appear to have been allophonic pronunciations of a same phoneme.[913] As for *Mlqrt* > *Mnqrt*, it could be a case of *l-r* > *n-r* dissimilation. The idea of a Cypriot linguistic substrate that did not distinguish between /n/ and /l/ therefore lacks the grounds to become acceptable.

In assessing the hypothetical interpretation of *pi*$^{??}$-*lu*$^{?}$ as a Cypro-Minoan spelling of Ugaritic /binu/, we need to keep in mind two facts: (1) at this stage, we are limited to the tentative values of transcription, which to a large extent depend on Linear B and Cypro-Greek; and (2) we know next to nothing about the phonology of the language(s) written with the Cypro-Minoan syllabograms. Utterly, we ignore the nature of the sounds underlying CM *l*$^{(??)}$ and *n*$^{(??)}$ and to what degree they contrasted phonologically. So the possibilities are countless. Among other possibilities, [l] and [n] might have been positional allophones of the same phoneme.[914] This would have

[909] Rubin (2007: 3-4)
[910] Bauer and Benedict (1997: 24).
[911] Z. Harris (1936: 23) and Calabro (2015: 101-104).
[912] Z. Harris (1936: 23).
[913] Calabro (2015: 103). In ancient Egyptian, [l] was apparently a conditioned allophone of /n/ and /r/ for a long period of time before it achieved phonemic status in the Demotic phase, perhaps earlier in certain dialects (see J. P. Allen 2013: 29, 32, 39-42). Accordingly, the Egyptian hieroglyphic *n* and *r* signs (though usually the latter) were both used to spell /l/ in Semitic loanwords: cf. *kbn* ~ *kpn* for /Gubla/ or /Gublu/, the Semitic name of Byblos (Horn 1963). This is yet another example of the articulatory proximity of /n/ and /l/.
[914] In Yoruba, a modern language spoken in Nigeria, [n] does not have phonemic status, instead occurring as an allophone of /l/ in before a nasal vowel, yet a writing system (Latin alphabet) with distinct *l* and *n*

implications for how the signs were used, more so in a non-Cypriot environment such as Ugarit. For this reason, it would be unwarranted to automatically discard 51-28 → *pi*[??]-*lu*[?] as a valid spelling for Ugaritic /binu/ just because of the *superficial* incongruity between *l*[??] and /n/. As orthographic and phonological regularity of proposed interpretations is an important element of any decipherment, it should be made abundantly clear that considering this reading is not the same as defending a position of "anything goes", but rather accepting that certain phonological phenomena well-attested typologically can lead to spelling variation in specific conditions.

55-09 → *ma*[??]-*li*[?] (A.01)

This reading is essentially the same attempted by Saporetti (*mi*/*ma-li*) and Nahm (*ma-li*), both of whom compared the sequence to the Nuzi Hurrian personal name *Maliya*, spelled *ma-li-*(*i*)*a*.[915] For Grøndahl, *Maliya* might correspond in Ugarit to the name *mly*, of unclear interpretation,[916] but for the correspondence to work we would expect it to be written as ***ma-li-j*V in Cypro-Minoan.

Short as it is, *ma*[??]-*li*[?] is probably a hypocoristic name. It could be an abbreviated form of *mlʕn*, an alphabetical name from Ugarit that Grøndahl analyzes as /Malla-ʕanu/ 'ʕAnu has announced' (< *mll* 'to announce'),[917] but it would have to be */Mallu/ (genitive */Malli/) with a hypocoristic *-u* suffix. As per van Soldt **Mallu* is theoretically possible, as suggested by the existence of other shortened forms like *Malitenu* and *Malilānu*,[918] but so far it is unattested. Alternatively, we can take note of the existence at Emar of a personal name *Mali* ([m]*Ma-li*), which is of uncertain etymology,[919] but might appear in coastal Syria as well.

None of these two comparanda is directly attested at Ugarit and, even if they were, dissyllabic sequences like *ma*[??]-*li*[?] are statistically likely to find various parallels, so their probative value is minimal.

102-23-51-28 → *a*[?]-*ti*[?]-*pi*[??]-*lu*[?] (A.02)

There is no parallel for this sequence. However, if it is a misspelling for 102-23<|>51-28 → *a*[?]-*ti*[?]<|>*pi*[??]-*lu*[?], then *a*[?]-*ti*[?] might correspond to **At*(*t*)*i*, the genitive of **At*(*t*)*u*, an unattested hypocoristic form with the *-u* suffix related to well-known personal names from Ugarit like *Atte/iyu*, *Attuyānu*, *At*(*t*)*enu*, etc.[920] In any event, as with 55-09 → *ma*[??]-*li*[?], the probative value of *a*[?]-*ti*[?]- would be minimal given its shortness.

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graphemes is used for the notation of the language (see Pulleyblank 1987: 973-975). It is not impossible that Cypro-Minoan presented a similar situation at a certain stage.

[915] Saporetti (1976: 102, fn. 87); Nahm (1981: 60). The name is listed in Gelb et al. (1943: 95).

[916] Grøndahl (1967: 159).

[917] Grøndahl (1967: 39, 158-159).

[918] See Van Soldt (2012: 208).

[919] Pruzsinszky (2003: 604).

[920] See Van Soldt (2012: 206). *Atti* has already been considered by Nahm (1981: 60), although without any analysis of what it might represent.

102-04-04-96 → *a*[?]*-ta*[??]*-ta*[??]*-ri*[?] (A.05)

There is no parallel for this name. It is tempting to compare the string *a*[?]*-ta*[??]*-t*[??]- to *ʕṯtrt* /ʕastartu/, i.e. the name of the Ugaritic goddess ʿAstartu, or to equate *-a*[??]*-ta*[??]*-ri*[?] with *ʕṯtr* /ʕastaru/,[921] her male consort, ʿAstar. Both are often found as formants of theophoric names. Unfortunately, neither leads to an onomastic identification capable of accounting for the totality of the sequence. The same problem prevents a connection with theophorics containing the name of the Storm-god *hd*(*d*) /(H)addu/ ~ /(H)adadu/.[922] É. Masson, who read 102-04-04-96 → *a-da-da-ru*, tentatively linked this sign-group to the personal name *ad-da-ru*, allegedly cognate with Akkadian *Addaru*, the twelfth month of the Babylonian calendar.[923] While the ending is not a problem (we expect a genitive in *-i*), obviously this proposal is implausible, as it would force us to assume that the scribe wrote an extra 04 = *ta*[??] sign. The sequence remains cryptic.

25-51-09 → *ka*[??]*-pi*[??]*-li*[?] (A.08)

This reading has already been suggested by Saporetti, who compared the Ugarit patronymic DUMU *kabuli* 'Son of Kabulu' and alphabetical *kbl*.[924] As noted by Nahm, who cannot offer an alternative account, the vocalism of the latter speaks against the identification.[925] A more suitable correspondence is available at the Syrian site of Emar, where we find the Akkadian name *Karbili* 'He who is blessed by god/ʾIlu'.[926] The Ugaritic texts do not attest to this name, but they do feature the name *krb*, which Watson plausibly compares to *Karbu* 'Blessed' from Emar.[927] *Karbu* contains the same Akkadian verbal root as *Karbili*. The presence of *krb* at Ugarit makes it easy to conceive the occurrence of a *Karbili* in the same city: the attestation of people with Akkadian personal names should not be considered a prerogative of eastern Syrian cities like Emar. Although Grøndahl's study of the onomasticon of Ugarit introduced a broad "Semitic" category of anthroponyms and did not distinguish them from the West-Semitic material,[928] the records from this coastal Syrian include individuals who carry Akkadian names.

104-09-04-55-96 → *i*[?]*-li*[?]*-ta*[??]*-ma*[??]*-ri*[?] (A.10)

Nahm put forward the same reading and identified it with Ugaritic *bn ilṯtmr* 'son of *ilṯtmr*'.[929] This is the patronymic name of a landowner who is mentioned in RS 11.858, a text found at the entrance of the Royal Palace of Ugarit.[930] Although *ilṯtmr* is attested

[921] *DULAT*: 193-194.
[922] Cf. *DULAT*: 334.
[923] É. Masson (1974: 42, fn. 128) citing Grøndahl (1967: 91).
[924] Saporetti (1976: 102, fn. 87).
[925] Nahm (1981: 61).
[926] Pruzsinszky (2003: 552).
[927] Watson (1995: 223). For *krb* at Ugarit, cf. Grøndahl (1967: 151).
[928] See Hess (1999: 505, 510).
[929] Nahm (1981: 61).
[930] Cunchillos et al. (2003: 876).

only in alphabetical form, it can be interpreted in the light of the royal name ʿAmmistamru, which shows an identical construction and is attested both in alphabetical and syllabic sources: *ʕmḏtmr*/*ʕmṯtmr* = *a-miš-tam-ru*/*am-mi-iš-tam-ru*/*a*(*m*)*-mi-iz-tam-ru* /ʕammīð/θtamru/ (cf. also Mari Amorite *Ḫammištamar*).[931] The first element of *ilṯtmr* is the divine name *il* 'ʾIlu', widely used in theophoric names from Ugarit. The second, *-ṯ/ḏtmr* = *-iš/z-tam-ru*, has been interpreted as /yiðtamar/ > /īðtamar/, presumably with a devoicing variant /īθtamar/, even though the syllabic orthography points /īðtamru/. This analysis is thoroughly confirmed by the Amorite name *Ì-lí-iš-ta-mar*, attested in Old Babylonian sources.[932] The prevalence of the spellings with Ugaritic voiceless *ṯ* suggest that the root involved is Semitic **ṯ-m-r* 'bear fruit, be fruitful', in which case *ʕmṯtmr* could be interpreted as 'The lineage is fruitful'.[933] Differently, Sanmartín suggests that *-ḏ/ṯtmr* reflects an Amorite root *ḏmr* 'to praise' that was reinterpreted at Ugarit as *ḏmr* to 'guard, protect', therefore entailing the meaning 'ʿAmmu (Divine Ancestor) has protected' for *ʕmṯtmr*.[934] Thus, the most likely interpretations of *ilṯtmr* are /ʾIlīθtamar/ or /ʾIlīθtamru/ (genitive /ʾIlīθtamri/) 'ʾIlu has protected'.

The unsettled interpretation of the Ugaritic fricative *ṯ* (syllabic *š*) as either non-sibilant /θ/ or sibilant /s/ has no ramifications for the spelling of /ʾIlīθtamar/ ~ /ʾIlīθtamri/ in RASH Atab 004. In coda position we would expect a fricative to be omitted if Cypro-Minoan treated such cases like Linear B (and possibly Linear A), but unlike Cypro-Greek, which is what *i*[?]*-li*[?]*-ta*[??]*-ma*[??]*-ri*[?] seems to indicate. By the same token, however, we would not expect /-īθtamri/ to appear as *-i*[?]*-ta*[??]*-ma*[??]*-ri*[?]. Woodard's "Hierarchy of Orthographic Strength" dictates that the cluster /mr/ be treated as a case of C1 > C2, where /m/ (nasal) is stronger than /r/ (liquid), so we would suppose that the empty vowel would follow the progressive spelling rule: ***-i*[?]*-ta*[??]*-mi*[??]*-ri*[?]. For reasons of economy, we should therefore assume that *-i*[?]*-ta*[??]*-ma*[??]*-ri*[?] reflects /-īθtamar/, potentially with a final "empty" *i* vowel. As we will see, a similar strategy can be postulated for the final syllable of 104-09-55-09-70 → *i*[?]*-li*[?]*-ma*[??]*-li*[?]*-ki*[??] (B.14).

19-87-73-96 → *u*[?]*-la*[?]*-mo*[??]*-ri*[?] (B.12)

The same transliteration is attempted by Nahm, who analyzes it as *ul-amurru* 'The god Amurru is strength'.[935] This name is unattested and its reconstruction is based on a type

[931] Huffmon (1965: 34, 81); *DULAT*: 166-167.
[932] See Gelb (1980: 59).
[933] For the interpretation of *-ḏ/ṯtmr* = *-iš-tam-ru* as 'fruitful', cf. Hess (1993: 31), citing Huffmon (1965: 81-82), Grøndahl (1967: 59-60) and Sivan (1984: 281). Notice, however that Grøndahl and Hess adhere to the more controversial interpretation of *ʕm* as a divine name ʿAmmu.
[934] See Sanmartín (2010: 135-137). Cf. also *DULAT*: 287. The sense of Ugaritic *ʕm* = Amorite *ḫamm-* presumably ranges between 'paternal uncle', 'kinsman' and 'people, kindred, lineage, ancestors' (Huffmon 1965: 196-197; Sivan 1984: 203; *DULAT*: 163), but other scholars adhere to the interpretation of the word as a divine name ʿAmmu 'Divine uncle/ancestor' (See fn. 933 and Sanmartín 2010: 137).
[935] Nahm (1981: 61).

of personal names built with the word /ʔūlu/ ‘strength’ or ‘(military) force’[936] plus a theonym, which at Ugarit is represented by *ulnhr* = *ú-lu-na-a-ri* ‘The River-god is strength’.[937] The divine name Amurru also occurs in the city, as *amr* = KUR(.MEŠ) *A-mur-ri*.[938] As the ingredients that would make up the name */ʔūl-Amurru/ (genitive */ʔūl-Amurri/) are attested at Ugarit, Nahm’s interpretation, albeit improvable on its own, remains plausible. The one potential irregularity would be the writing of /u/ with Cypro-Minoan *o*(??).

21-82-75-51 → *ko*??-*sa*??-*ra*?-*pi*? (B.13)
This is analogous with *Ko-sa-ra-bi*, the reading proposed by Saporetti,[939] who identifies it with the Semitic personal name *ku-šar-a-bu* (genitive *ku-šar-a-bi*) ‘The god Kōṯaru is my father’, attested at Ugarit.[940] The divine name Kōṯaru occurs in alphabetic and syllabic spellings, respectively as *kṯr* and *ku-šar-ru*.[941] Huehnergard ponders the vocalizations /Kōθaru/ or /Kŭθaru/,[942] while Bordreuil and Pardee have only /Kōṯaru/[943] (/θ/ and /ṯ/ express the same sound in the authors’ different notations). The evidence of the Greek-written Punic divine name Χουσωρ, as well as its feminine counterpart Χουσαρτις, points to Proto-West-Semitic */kawθar-/[944] and therefore Ugaritic /Kōθaru/. Hence, the genitive form of *ku-šar-a-bi* can be vocalized as /Kōθarʾabi/, which is a clear-cut match for *ko*??-*sa*??-*ra*?-*pi*?. Notice that the alternative interpretation of Ugaritic *ṯ* as /s/ would make the correspondence even more remarkable (/Kōsarʾabī/), but it is safe to assume that Cypro-Minoan *s*, like syllabic cuneiform *š*, could be used for a foreign coronal fricative /θ/.

104-09-55-09-70 → *i*?-*li*?-*ma*??-*li*?-*ki*?? (B.14)
Saporetti read this sequence as *i-li-mi-li-ki* and equated it with Ugaritic name *ilmlk* ‘My god is king’, which was the name of one of the most famous scribed of Ugarit, but later Nahm proposed *i-li-ma-li-ki*.[945] The vocalization of this name, particularly the first vowel of *-mlk*, was for long controversial. The decipherer of Ugaritic, Virolleaud, read the name as *El-melek*, using as reference Elimelech, a cognate Hebrew anthroponym from the Bible; later, syllabic spellings of a similar name in the cuneiform archives of Alalaḫ (*i-li-mi-il-ki*) and Ugarit (DINGIR-*mil-ku*) suggested the reading ʿ*Ili-milku*; finally, the discovery of multilingual lexical lists at Ugarit revealed that the Ugaritic word for ‘king’ was *ma-al-ku*, leading to yet another vocalization, this time as ʿ*Ili-*

[936] Sivan (1984: 201); *DULAT*: 52.
[937] Grøndahl (1967: 91); *DULAT*: 59-60.
[938] *DULAT*: 72.
[939] Saporetti (1976: 102), followed by Nahm (1981: 61).
[940] Sivan (1984: 238), citing *PRU* 3: 154.
[941] *DULAT*: 472. Cf. also the personal name *kṯrmlk* ‘Koṯaru is king’.
[942] Huehnergard (2008: 141)
[943] Bordreuil and Pardee (2009: 74, 322).
[944] Hackett (2008: 88).
[945] Saporetti (1976: 102); Nahm (1981: 59, 61).

malku.[946] The problem that emerged was that the onomastic element *mlk* seemed to have two different vocalizations at Ugarit, *mal(i)k-* and *milk-*. Van Soldt has addressed this issue by surveying the names with such elements in the cuneiform syllabic texts from 2nd millennium Syria and Palestine. He concludes that *milk-*, which can mean 'counsel' or 'Milku (the name of a god) ', is mostly found at the beginning of a name, the exception being *ʾIlu/ī-milku* (where *milk-* presumably is a variant of Ugaritic *mal(i)k-*). Simultaneously, at the end of compounded names we find *mal*(*i*)*k*(-), which has two diferent meanings in different compounds: if the first element is a verb of a noun that is not a divine name, then *mal*(*i*)*k-* stands for the theonyms Malik; if the compound follows the formula DN-*mal*(*i*)*k*(-), then it means 'king'.[947] This distribution results in two possible vocalizations of *ilmlk* that resemble Cypro-Minoan *i*[?]*-li*[?]*-ma*[?]*-li*[?]*-ki*[?]. One is /ʾIlī-malku/ (genitive /ʾIlī-malki/) and the other /ʾIlī-malik/, but both are to be translated as 'My god is king'[948]. The latter is attested in early Mari as *Ì-lí-ma-lik* (Amorite)[949] and has a good parallel at Alalaḫ, DINGIR-*ma-lik*, although in this case DINGIR might reflect /ʾIlu/.[950] For reasons of orthographic regularity, we expect *i*[?]*-li*[?]*-ma*[?]*-li*[?]*-ki*[?] to conceal a genitive form with *-ma-li-k*(*i*) /-malik/ instead of *-ma*$^{(l)}$*-ki* /-malki/. In other words: if *i*[?]*-li*[?]*-ta*[??]*-ma*[??]*-ri*[?] represents /ʾIlīθtamar/ with the coronal fricative in coda being omitted, then we should expect the liquid to be omitted here as well unless it was not in coda. Thus, the most likely reading is *i-li-ma-li-k*(*i*) for /ʾIlīmalik/.

19-91-73-23 → *u*[?]*-mi*[??]*-mo*[??]*-ti*[?] (B.14)

Again, this transliteration was already proposed by Nahm, who duly compared alphabetical *ummt*[951] /ˢUmmīmōtu/ 'My mother is Mōtu (Death)'. For the structure of this name we can compare *Ummiḫibi* 'My mother is (the goddess) Hebat'.[952] Ugaritic *mt* is to be phonologically interpreted as /mōtu/, as it derives from Proto-Semitic **mawtu*. The monophthongization */aw/ > /ō/ in Ugaritic is revealed in cuneiform syllabic spellings such as *mušabu* for /mōθabu/ < */mawθab-/ 'seat, dwelling',[953] and agrees well with the use of a Cypro-Minoan sign whose hypothetical value is *mo*[??], in line also with the case of /Kōṯaru/ in *ko*[??]*-sa*[?]*-ra*[?]*-pi*[?], as seen above.

102-25-87-51 → *a*[?]*-ka*[??]*-la*[?]*-pi*[??] (B.15)

Saporetti arrived at the same reading,[954] but his comparison of it with the Ugarit Hurrian name *a-ga-li-bi* (cf. also alphabetical *aglby*)[955] is prevented by differences in vocalism.

[946] Van Soldt (2003b: 449-450).
[947] Van Soldt (2003b: 470).
[948] It also seems possible to interpret *ʾIlī-milku* as 'My god is Milku' and /ʾIlī-malik/ as 'My god is Malik'.
[949] Huffmon (1965: 25, 165).
[950] AT 132: 21 (Wiseman 1953) cited in von Dassow (2008: 444). For an instance of /ʾIlu-malik/ 'ʾIlu (is) king', cf. DINGIR-*lu*$_4$*-ma-lik* from Emar (Pruzsinszky 2003: 480).
[951] Grøndahl (1967: 99, 162); *DULAT*: 71.
[952] Grøndahl (1967: 99, 232).
[953] Huehnergard (2008: 135); Tropper (2012: 188).
[954] Saporetti (1976: 102, fn. 87). See also Nahm (1981: 62).

Instead, the similarity between the endings of *a*[?]*-ka*[??]*-la*[?]*-pi*[??] and *ko*[??]*-sa*[?]*-ra*[?]*-pi*[?] /Kōθarʾabī/ suggests a compound with Ugaritic *ab* '(my) father'. At Ugarit we have the hybrid Semito-Hurrian name *abġl* = *a-bi-ḫe*/*ḫé-li*[956] /ʾAbī-ɣeli/ 'My father is an emancipated slave'(?). This translation is supported by behavior of *ġl* as an allomorph of *a/iġl* = *eḫ(e)li* 'emancipated (slave)[(?)]' that has undergone aphaeresis. This is clearly indicated by the personal name *ġlkz*, a variant of *aġlkz* /Eɣli-Kuzuh/, and possibly by *ġlmn* = *ḫal-la-ma-na* /ɣalamānu/, which reminds the hypocoristic *aġlmn* = *a-ḫal-me-ni* ~ [*e*]*ḫ-li-m*[*e*[?]]*-ni*.[957] Considering the vacillation *aġl* ~ *ġl* and the fact that names with the pattern 'my-father-(is)-NOUN' can be reversed (cf. *ab-ršp* alongside *ršp-ab*[958]), I propose to read *a*[?]*-ka*[??]*-la*[?]*-pi*[??] as /Aɣalʾabī/. This would correspond to an unattested form **aġlab* that is the reverse of *abġl* 'My father is an emancipated slave'(?).

51-28 | 55-70 → *pi*[??]*-lu*[??] | *ma*[??]*-ki*[??] (B.15, B.18)

We have seen above that the likeliest interpretation for *pi*[??]*-lu*[??] is that it represents the Ugaritic word for son, /binu/. That *ma*[??]*-ki*[??] follows *pi*[??]*-lu*[??] on two occasions suggests that it is either a very common personal name (hypocoristic?) or, more probably, a vocabulary item. It is tempting to interpret *pi*[??]*-lu*[??] *ma*[??]*-ki*[??] as /binu malki/ 'son of the king'. In some documents from Ugarit we find people described as *bn mlk* /binu malki/. One possible example is *ʕzn bn mlk* in text RS 11.800 from the archive of the palace (see Table 5.9 in 5.4.2.2). This man has been compared to ʿUzzinu, who, according to another text from the palace (RS 17.251), this time in Akkadian, was the "prefect" (*sākinu*) of Ugarit.[959] It is possible that this is an honorific title, even though *a*[?]*-ka*[??]*-la*[?]*-pi*[??] and *mo*[??]*-**92*-ni*[?] have no obvious correspondent amongst the names of high-ranking figures mentioned in the Ugaritic records. The less likely alternative is that *ma*[??]*-ki*[??] reflects *Makku* (gen. *Makki*), a name of uncertain etymology attested at Emar,[960] which would casually be part of the patronymic of two individuals mentioned in RASH Atab 004.

e[?]*-we*$_2$[??]*-ta*[??]*-sa*[??]*-li*[?] (B.16)

A very similar reading, *e-we-ta-ša-li*, has already been proposed by Nahm.[961] His identification of this sequence with the Ugarit Hurrian personal name *iwrtḏl* = EN-*ta-šal* / EN-*ta-ša-lu*[962] /Evri-tazal/, where EN is a Sumerogram for the Hurrian word /evri/ 'lord' is tantalizing, but comes with one problem. The first element is spelled syllabically as *e-wi-ri* (= Akkadian *bēlu* 'lord') in a trilingual lexical list from Ugarit,[963]

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[955] Grøndahl (1967: 216, 245); *DULAT*: 25.
[956] *DULAT*: 7.
[957] See full references above, in the analysis of 102-25-87 → *a*[?]*-ka*[??]*-la*[?] (A.01).
[958] *DULAT*: 13, 748.
[959] Lackenbacher (2002: 177).
[960] Pruzsinszky (2003: 603).
[961] Nahm (1981: 62).
[962] Grøndahl (1967: 225); *DULAT*: 133.
[963] Nougayrol (1968: 244) and Huehnergard (2008: 26).

so one would expect /Evri/ to be spelled as ***e-we*$_2$*-re-*, if not ***e-wi*$_2$*-ri-*, the cluster being broken with a progressive empty vowel. A form showing metathesis such as **/Evir-/ or /Ervi-/ also finds little support in the Ugarit documents, except perhaps for *irbtn* /Ervitenu/(??), possibly a variant of *iwrtn* /Evritenu/,[964] in turn a hypocoristic form of */Evri-Tessob/ 'The Storm-God (is) the Lord'.[965] But otherwise metathesis does not seem well-documented in Syrian Hurrian. However doubtful this identification may appear, it must be noted that the appearance of the vocalic sign CM 38 = *e*$^{?}$ strongly points to a Hurrian form, since this language, unlike Ugaritic, possessed a vowel /e/.[966] This is clear from interchanges of word-initial alphabetical Ugaritic *á* and *í* in the spelling of some Hurrian names (cf. the discussion of 102-25-87 → *a*$^{?}$*-ka*$^{??}$*-la*$^{?}$ above).

a$^{?}$*-ra*$^{?}$*-pi*$^{??}$*-ma*$^{??}$*-sa*$^{??}$*-ko*$^{??}$*-li*$^{?}$ ¶ (B.16)

The interpretation of this sign-group is very problematic. It seems likely that it describes or qualifies the first word, assuming *e*$^{?}$*-we*$_2$$^{??}$*-ta*$^{??}$*-sa*$^{??}$*-li*$^{?}$ is really a name. The final string -(*a*$^{??}$)*-ko*$^{??}$*-li*$^{?}$ is reminiscent of the Hurrian suffix chain *-ġl = (u)ḫ(u)li*, used in occupational names. Notice that phonetically the latter shows great variation: /(=o)=ɣ(e)=(o/u)=li/.[967] This chain of suffixes occurs in alphabetical form in Hurrianisms contained in the texts from Ugarit: cf. e.g. *ḫḏrġl* 'a type of server in the cult' (possibly /xazeroɣo/uli/ = Alalaḫ Akkadian *ḫašeruḫuli*), *mdrġl* 'member of a military class' and *tdġl* 'a craftsman'.[968] The spelling of our Cypro-Minoan sign-group suggests a form /-ɣoli/ attached to an *a*-stem. At first sight it would be tempting to connect the string *-ma*$^{??}$*-sa*$^{??}$*-ko*$^{??}$*-li*$^{?}$ with the previously mentioned military title *mḏrġl*, particularly if *mḏr-* corresponded to Akkadian *maṣṣāru* 'guard, watchman' or Ugaritic *mḏrn* refers to a weapon.[969] This is all the more tempting as Van Soldt lists about 100 individuals attached to this professional class in the documents of Ugarit, making it one of the largest segments of the city's society. However, Vita duly signals the irregularity of the correspondence between Akkadian *-ṣṣ-* and Ugaritic *-ḏ-* and more plausibly compares *mḏr-* to Hurrian *ma-zi-ri* 'help'. He therefore analyzes the form as /maz=ir(i)=u=ɣ(e)=li/ (his notation), with *-ġl* reflecting /o=ɣ(e)=li/.[970] If Vita's interpretation is correct, then the pronunciation *mḏrġl* was most likely /maziroɣ(e)li/, not /mazarɣoli/, and it would therefore not match our sequence.

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[964] Cf. *DULAT*: 100.
[965] The existence of such a name is plausible: at Alalaḫ we find [E]N-^{d}IM = /Evri- Tessob/(?) and with more certainty the reverse /Tessob-evri/ (*Te-eš-eb-ri* and ^{d}IM-*eb-re*) (von Dassow 2008: 485).
[966] Wegner (2007: 46-47);Wilhelm (2008: 85).
[967] Giorgieri (2000: 209-210).
[968] *DULAT*: 388, 529, 859.
[969] *DULAT*: 529.
[970] Vita (2007: 181-182).

5.4.2.4.2 Stage 2: Sequences ending in CM 100 and sequences containing CM 71

In Chapter 2 I have suggested very tentatively that forms CM 65, 67, 99 and 100 *could* represent the same grapheme. Since CM 67 was assigned the hypothetical value *ni*[??] in Chapter 3, it would already be tempting to *test* the same reading in CM 100. Fortunately, the latter also presents some features that allow us to analyze it internally. It is one of the most frequent signs in RASH Atab 004, being attested eleven times, and is used in a very clear pattern: in nine instances it is sequence-final and in the remaining two it is penultimate before sign CM 40. In addition, in three of its nine occurrences in final position it is preceded by CM 71. These nine sequences with final 100 represent about one-fourth of the sequences in the tablet, excluding 51-28. This stage is concerned with final CM 100 and CM 71, which is found thrice before final -100. The two sign-groups that end in -100-41 will be analyzed in Stage 3 (see 5.4.2.4.3). These are the sequences that will occupy us here: 102-02-100 (A.04); 04-71-100 (A.05); 38-35-100 (A.07); 37b-04-100 (A.09); 104-09-71-100 (A.09); 04-08-100 (A.10); 102-02-71-100 (A.11); 92-28-95-100 (A.11); 73-92-100 (B.18); and 104-71-06-23 (A.06).

Based on the frequency of CM 100 in final position, É. Masson assigned it the value *ni* because the consonant *n* was "la plus fréquente pour les noms sémitiques simples";[971] her basis was the work of Grøndahl, who estimated that personal names with the "Suffix -*n*" represented about 35% of the sample of Ugarit anthroponyms she studied in 1967.[972] É. Masson's interpretation needs to be reconsidered and reassessed based on the updated evidence from Ugarit onomastics.

Of a maximum of eleven different suffixes that are used regularly to form abbreviated names at Ugarit, there are six that contain -*n*-: -*n*(*u*), -*ān*(*u*), -*yān*(*u*), -*ten*(*u*), -*mān*(*u*), -*men*(*u*). Although this has no ramifications for our present discussion, it is worthwhile mentioning that for van Soldt the one suffix -*nu* that is added to the first element of compounded names, thus generating different endings (-*inu*, -*enu* and -*unu*) depending on the vowel of the first component, whereas in the case of -*ānu* the long vowel is part of the suffix. Thus, a composite name that begins with the Semitic element *Yabni*- (e.g. *ybnmlk*) can be abbreviated as *Yabninu* or *Yabnānu*.[973] Although van Soldt does not provide a percentage of all abbreviated names ending in -*n*-, recently he estimates that those with the ending -*ānu* were more than 200 out of over 2600 Ugaritic names[974] (cf. 5.4.1.4). As regards hypocoristics written alphabetically, *DULAT* includes 577 entries that are interpreted as personal names ("PN") and end in -*n* (personal count).

At the outset, I would like to underline the high probability that the transliterations of three-sign sequences from RASH Atab 004 produce accidental correspondences with hypocoristics found at Ugarit, especially as the Ugaritic and

[971] É. Masson (1974: 41-42, n. 118)
[972] Grøndahl (1967: 25).
[973] Van Soldt (2012: 201).
[974] Van Soldt (2010: 317).

Hurrian languages together only have so many phonemes. This means that the two cases of four-sign sequences have a higher probative value.

102-02-100 → *a*[?]*-ne*[??]*-ni*[??] (A.04)
Nahm made the same transliteration and identified this with the name *ann* /Ananu/ (the attested syllabic spellings are *a-na-ni* and *an-na-na*),[975] from the Hurrian word *anan-* 'rejoice'.[976] This anthroponym is abundantly attested at Ugarit, as well as Alalaḫ[977] and Emar. In the latter city we find not only Hurrian *Anani* ([m]*A-na-ni*), but also *Anini* ([m]*A-ni-ni*), of uncertain etymology.[978] The advantage of comparing Emar *Anini* is that the cuneiform syllabogram *ni* can also be read as *ne* and therefore it offers us a closer parallel than *Anani*.

38-35-100 → *e*[?]*-wi*$_2$[??]*-ni*[??] (A.07)
Nahm read only *e-*35-ni* and made no attempt at interpretation. As with *e*[?]*-we*$_2$[??]*-ta*[??]*-sa*[??]*-li*[?] above, the use of CM 38 = *e*[?] is expected to be implicated in the transcription of a Hurrianizing form. Because we are dealing with a trissyllabic sequence, it is tempting to compare the Ugarit names *e-be-ni* (i.e. *e*-PI-*ni*) and *i-wa-na*, which according to Grøndahl contain a Hurrian root *e/ib/w-*.[979] This is probably related to the Hurrian name *Ewen*(*n*)*i* at Mari, spelled *e*-PI-*ni* and *e*-PI-*en-ni*,[980] as well as *Ewen* (*E*-PI-*en*) at Alalaḫ. The spellings at Ugarit point to /Even(n)i/. If this identification were correct, we would potentially have to revise its hypothetical value from the *wi*$_{(2)}$[??] to *we*[??] (*we*$_2$[??] is already assigned to CM 01). The problem is retaken in Stage 4 (see 5.4.2.4.4).

37b-04-100 → *37b-*ta*[??]*-ni*[??] (A.09)
This sequence is discussed in Stage 3 (5.4.2.4.3) because it needs to be treated together with 37b-71-100-40 (A.09).

04-08-100 → *ta*[??]*-na*[??]*-ni*[??] (A.10)
This matches the Ugarit personal name *dnn* = *da-na-nu*[981] /Danānu/, as suggested by Nahm.[982]

[975] Nahm (1981: 60). For the name, see Grøndahl (1967: 217-218), *DULAT*: 81 and van Soldt (2012: 199).
[976] Van Soldt (2012: 199).
[977] See Wiseman (1953: 128) and von Dassow (2008: 417-418).
[978] Pruzsinszky (2003: 139).
[979] Grøndahl (1967: 222).
[980] Sasson (1974: 360).
[981] Grøndahl (1967: 52, 123); *DULAT*: 276.
[982] Nahm (1981: 61).

04-71-100 → *ta*[??]-*71-*ni*[??] (A.05); 104-09-71-100 → *i*[?]-*li*[??]-*71-*ni*[??] (A.09); 102-02-71-100 → *a*[?]-*ne*[??]- *71-*ni*[??] (A.11)

It is now time to see whether a combinatorial solution can elucidate the value of the untransliterated sign CM 71. I will at first leave out 04-71-100 → *ta*[??]-*71-*ni*[??], because it is trissyllabic, as well as 104-71-06-23 → *i*[?]-*71-*pa*[??]-*ti*[?] (A.06), since it does not evoke any immediate parallel. I will begin, thus, by analyzing 104-09-71-100 → *i*[?]-*li*[??]-*71-*ni*[??] and 102-02-71-100 → *a*[?]-*ne*[??]- *71-*ni*[??]. These sign-groups have two advantages: not only they contain four syllables, thus reducing the chance of accidental parallels, but they also end with in -71-100. If final -100 is indeed to be read -*ni*[??] and conceals a hypocoristic suffix, then we need to explore the possibility that -*71-*ni*[??] reflects one of the hypocoristic suffixes with -*n*(*u*) mentioned above: -*yān*(*u*), -*ten*(*u*), -*mān*(*u*) or -*men*(*u*). In this way, *ja*[??], *te*[??], *ma*[??] and *me*[??] would be the four phonetic values to be tested. At this point we should also take into account the paleographical and comparative evidence and reopen the dossier of Chapter 3. This should not be taken as circular reasoning: ideally, the phonetic value of CM 71 should lead to plausible identifications and at the same time remain consistent with the general tendency of Cypro-Minoan signs to be akin to Linear A and Cypro-Greek syllabograms. Consequently, *te*[??] and *ma*[??] are implausible candidates, because we have already seen that CM 07 (𐄡) or CM 61 (𐄱) and CM 53/54/55 (𐄳, 𐄴, 𐄵), respectively, are the signs that look most similar to Linear A and Cypro-Greek syllabograms with identical values. Moreover, while no Cypro-Minoan sign has yet presented itself as a good candidate for *me*[??], CM 71 (𐄻) is hardly a good comparandum to LA 13/*me*[?] (𐘍) or CGk *me* (𐠘). Much on the contrary, CM 71 (𐄻) is suspected of being related to CM 69 (𐄹) → *ja*[?]. It is worth considering the possibility that CM 69 and 71 are allographs of the same grapheme, and, as Nahm suggested, can both be read tentatively as *ja*[??].[983]

This produces at least one immediate result. 104-09-71-100 → *i*[?]-*li*[??]-*ja*[??]-*ni*[??] can be identified, again as already done by Nahm, with the Ugaritic hypocoristic *ilyn* = DINGIR-*ia-nu*, i.e. /ʾIlijānu/.[984]

102-02-71-100 → *a*[?]-*ne*[??]- *71-*ni*[??] → *a*[?]-*ne*[??]-*ja*[??]-*ni*[??] is evocative of abbreviated names from Ugarit built with Hurrian *anan*- ‘rejoice’ (cf. 102-02-100 → *a*[?]-*ne*[??]-*ni*[??] above), such as /Ananiju/ or /Ananāju/ and /Ananijānu/,[985] but none of them is an exact match for our sequence. It would be safer to pose a hypocoristic that unrelated to *anan*-. The Nuzi personal name *Anneya* (spelled *An-ni-e-a* and *An-ni-ia*) is noteworthy, but there is satisfactory comparandum.

As for 04-71-100 (A.05), it would read as *ta*[??]-*ja*[??]-*ni*[??], as already suggested by Nahm.[986] In Ugarit we have the alphabetical name *tyn*. It is of uncertain etymology and

[983] Nahm (1981: 58).
[984] Grøndahl (1967: 54, 96); *DULAT*: 68.
[985] Respectively *anny* = *a-na-ni-ia* or *a-na-na-ia* and *annyn* = *a-na-an-ia-nu*/*a-na-ni-ya*(*-a*)*-nu* (Grøndahl 1967: 217f; *DULAT*: 82)
[986] Nahm (1981: 60).

therefore of uncertain vocalism,[987] but most likely ends in /-ānu/, whence its structure should be /tVjānu/. Nahm has plausibly compared *Tayanu*, a Hurrian name from Nuzi,[988] probably a hypocoristic form of names whose first element is Hurrian *tai-*. It is possible that *tyn* is the same name.

It must be admitted that assigning the value *te*[??] instead of *ja*[??] to sign CM 71 would also produce two interesting results: 04-71-100 → *ta*[??]*-te*[??]*-ni*[??] vs. Ugarit *ttn* = *ta-te-nu* /Tatenu/;[989] and 102-02-71-100 → *a*[?]*-ne*[??]*-te*[??]*-ni*[??] vs. Ugarit *antn* = *a-na-te-nu* /Anatenu/.[990] However, 104-09-71-100 → *i*[?]*-li*[?]*-te*[??]*-ni*[??] would now be left with no acceptable parallel. We will see in Stage 3 that reading CM 71 = *ja*[??] leads to more compelling results.

92-28-95-100 → *92-*lu*[?]*-wa*[?]*-ni*[??] (A.11) and 73-92-100 → *mo*[??]*-*92-*ni*[??] (B.18)
Nahm read this sequence as *92-*ru-wa-ni* and thought that transliterating *92 as *sa* would yield an Anatolian name *Saruwani*,[991] apparently attested at Ugarit as *ša-ru-wa-na*.[992] There are two fundamental issues with this idea: (1) here I have arrived at *lu*[??] not *ru* as the hypothetical value of CM 28; (2) for Anatolian /s/ a spelling with CM 82 = *sa*[??] would be expected.

To account for *92-*lu*[?]*-wa*[?]*-ni*[??], I have searched for names spelled alphabetically with *-lwn* or syllabically with *-lu-wa-n*V in the documents from Ugarit. I have found only three: *ilwn* (etymology uncertain),[993] *llwn* = *lu-lu-wa-na* (possibly Anatolian),[994] and *plwn* (etymology uncertain)[995]. The first two must obviously be dismissed, since they would be expected to be spelled 104-28-95-100 → *i*[?]*-lu*[?]*-wa*[?]*-ni*[??] and 28-28-95-100 → *lu*[?]*-lu*[?]*-wa*[?]*-ni*[??], respectively. Since *plwn* has no accepted etymology and no syllabic attestations we cannot tell the vocalism of its first syllable. It remains a possibility, but since we already have possible identifications of *pa, pe, pi, po*, and *pu*, the chances that this is the anthroponym concealed by 92-28-95-100 are not high. Grøndahl listed a name *za-lu-wa-nu* of uncertain etymology which would have been a good match,[996] but later scholarship has shown that in this case, the ambivalent cuneiform sign PI is to be read not as *wa*, but as *ia*. We therefore have *za-lu-ia-nu*, as suggested by the alphabetic name *slyn*.[997]

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[987] Grøndahl (1967: 252); *DULAT*: 884.
[988] Gelb et al. (1943: 143).
[989] Grøndahl (1967: 206); *DULAT*: 883.
[990] Grøndahl (1967: 422); *DULAT*: 84-85.
[991] Nahm (1981: 61).
[992] Grøndahl (1967: 291). Also problematic is that, to the best of my knowledge, in actual Anatolian contexts *Saruwani* is attested only as the name of an 8th-century BCE prince of *Naḫita*/Niğde (cf. Laroche 1966: no. 1132).
[993] Grøndahl (1967: 273); *DULAT*: 68.
[994] Grøndahl (1967: 282); *DULAT*: 499.
[995] Grøndahl (1967: 288); *DULAT*: 673.
[996] Grøndahl (1967: 306, 350).
[997] *DULAT*: 763.

The problem is evidently the value of CM 92, which has no parallels in Linear A and Cypro-Greek. This sign is very rare in Cyprus: there are two secure instances in CM 1 and two others in CM 2. Conversely, it is attested five times at Ugarit, three of which in RASH Atab 004. Assuming it is a CV syllabogram, it is a possibility to consider that it is rare in Cyprus is because it contains a rare consonant, one of the less frequent vocalic values, or both, whereas at Ugarit it is slightly more used because it as useful to write a sound or sounds more easily found in Semitic and Hurrian material. A type of consonant that fits this description is sibilants (numerous in the Semitic languages), and more so affricates, of which Ugaritic possessed two or three and Hurrian one or two (see 5.4.1.1 and 5.4.1.3). If CM 92 represents a sibilant, then it must be noted that there is a higher probability that its an affricate, not a fricative. The hypothetical values suggested in Chapters 3 and 4 have delineated a fairly consistent *s* series (CM 82, 44 and 27 → *sa*[??], *se*[??], *si*[??], less certainly CM 37 *so*/*pu*[??] and 46/47 → *s*/*tu*[??]), likely to conceal fricative sibilant, but left open the possibility of two *z* series (affricates?) and many vacancies for syllabograms belonging to them. At this stage we have only CM 59 = *zo*(2)[??] and 112 = *z*/*ke*[??], to which we can now add CM 37b/41 = *zi*[??].

At Alalaḫ we find a Hurrian name *Ziluwan* (*Zi-lu-wa-an*),[998] which could match our *92-*lu*[?]-*wa*[?]-*ni*[??], if CM 92 represents a second *zi*[??] sign. The reading is tantalizing, but ideally it should yield a corroborating identification in 73-92-100 → *mo*[??]-*92-*ni*[??] with the same experimental value, i.e. as *mo*[??]-*zi*(2)[??]-*ni*[??]. For Nahm, who transliterated 73-92-100 → *mo-sa-ni*, this was a personal name constructed with the Hurrian root *muš*/*z*-, seen in personal names like EA-*mušni* and *ib*/*wrmḏ* = EN-*mu-šu*/*za* ~ *ib-ra-mu-zi* /Evra-muza/[999] (Ugarit) as well as *Muzi* and *Mušateni* (Nuzi). It must be kept in mind that he distinguished between a fricative syllabogram *ša* ← CM 82 (implicitly for Ugaritic /θa, ða/ or /sa, za/ and Hurrian /sa, za/) and an affricate *sa* ← CM 92. However, the oscillation between syllabic cuneiform *š* and *z* in Hurrian *muš*/*z*-[1000] implies a Hurrian voiced fricative sibilant /z/. We might wonder why Cypro-Minoan would spell /z/ with a series other than CM *s*[??], as so far there are no indications that the script distinguished voicing in the obstruents. In that regard, we could entertain that while voiceless /s/ was spelled with *s*[??], voiced /z/ was spelled with one of the CM *z*[??] series, but this is plausible only if *e*[?]-*we*$_2$[??]-*ta*[??]-*sa*[??]-*li*[?] is *not* /Evri-Tazal/. There is larger obstacle, however: for the reading to work we would probably need to assume that *mo*[??]-*zi*(2)[??]-*ni*[??] represented a hypocoristic */Muz(i)ni/, which seems less likely to occur than */Muzāni/, which would bear the well-known suffix *-ān*(*u*) and seems to be

[998] Text AIT 179: 34 (Wiseman 1953 apud von Dassow 2008: 498).
[999] Grøndahl (1967: 210, 224, 241); *DULAT*: 12. *Eb-ri-mu-ša* is attested at Alalaḫ (Von Dassow 2008: 438).
[1000] Cf. also the Ugarit name *mzln* (Grøndahl (1967: 241; *DULAT*: 607), possibly identical with the anthroponym *Mušalenni* from Nuzi (Gelb et al. 1943: 99).

attested at Mari (*Mu-za-ni*).[1001] All in all, the sequences involved are too problematic and the identification of CM 92 must remain uncertain.[1002]

104-71-06-23 → *i*[?]*-ja*[?]*-pa*[??]*-ti*[?] (A.06)
Nahm's transliteration was identical but he was not able to advance an interpretation. I would like to suggest very tentatively a connection with a name found in the Ugarit liver model RS 24.326, which reads: *kbd dt ypt bn yknʕ* "This [is] the liver model of *Ypt*, son of *Yknʕ*". *DULAT* connects this name *ypt* to *yp* 'dignity, beauty'[1003] or *ypt* /yapattu/ 'calf' (< **yapantu*, cf. Arabic *yafanat*), which is feminine. Unfortunately, the vocalization is not secure so the identification has to remain unproven.

5.4.2.4.3 Stage 3: Sequences ending in CM 40 and sequences containing CM 37b

Since É. Masson took the sign-groups that end with sign CM 40 to be toponymic adjectives as attested in the Ugaritic documentation (5.4.2.2), she assigned to this syllabogram the value *yi*/*e*.[1004] This was based on the fact that the Ugaritic gentilics are formed by means of the suffix *-y*, most likely reflecting /-ijj-/ or /-īj-/ (conventionally notated /-iyy-/ or /-īy-/ in the Semiticist bibliography), as seen e.g. in syllabic *u-ga-ar-ti-yu* 'Ugaritian'.[1005] The primary function of this suffix is to transform a noun into an adjective. In Ugaritic, the vowel following /-īy-/ naturally depends on the case ending. So far, the sign-groups in RASH Atab 004 seem to end consistently with *-i*, which points to most or all of the entries in the tablet being in fact in Ugaritic and in the genitive case.

Nahm followed Masson in her reasoning and ambiguous transliteration *yi*/*e* of CM 40, although he uses *yi* in his readings.[1006] The formal similarity between CM 40 (𐄩) and LA 47 (𐘗), which I have argued for in 3.4.10, did not escape Nahm, who claims to have extracted the value *ye*, i.e. *je*, from the Linear A sign. The fact is that sign LB 47 (𐀗, 𐀘) remains untransliterated. Nahm's confusion probably stems from the frequent difficulty in distinguishing it from LB 46/*je* (𐀖) paleographically.[1007] Curiously, in the 1970s Doria had posited the value i_2 or *ji* for LB 47, a reading also pondered by Melena,[1008] on the grounds that the sign is almost always attested in word-

[1001] Sasson (1974: 364).
[1002] Another scenario worth exploring is the possible use of CM 28 = *lu*[??] for /nu/ as suspected in the case of 51-28 → *pi*[??]*-lu*[??] = /binu/(?). In fact, Van Soldt (2012: 211) mentions a name *Šinuwānu* without specifying the source. Perhaps this is his interpretation of *ṯnwn*, a personal name that has been added to the very recent third edition of *DULAT* [2015]. This venue would require further investigation, but a priori we can already say that for the initial sound /θ/ or /s/ we would expect CM 27 → *si*[??].
[1003] Ugaritic *yp* is vocalized as /yapū/ by Sivan (1984: 288), but reconstructed by Bordreuil and Pardee (2009: 318) as /yupū/.
[1004] É. Masson (1974: 42, 44-45).
[1005] Bordreuil and Pardee (2009: 34); Tropper (2012: 273).
[1006] Nahm (1981: 56, 60).
[1007] Melena (2000: 19-20).
[1008] Doria (1972) apud Melena (2000: 22).

initial position.[1009] Still, this is insufficient evidence to support the value on the Aegean side.

Here, the hypothetical value *ji*[??] is considered for CM 40 because É. Masson's analysis of the constructions of RASH Atab 004 that employ it, in comparison with Ugaritic texts, stands scrutiny. The sequences to be analyzed in this stage are 55-25-51-40 (A.04), [[••]]25-06-100-40 (B.12); 37b-71-100-40 (A.09) is treated alongside 37b-04-100 (A.09) for an attempt at finding the value of 37b.

55-25-51-40 → *ma*[??]*-ka*[??]*-pi*[??]*-ji*[??] (A.04)
Nahm already read CM 40 as *yi* and this sequence as *ma-ka-pi-yi*. He identified the latter with Ugaritic *mʕqby*, the toponymic adjective of *mʕqb* = [URU]*ma-*(*ʔa-*)*qa*/*qá-b*V,[1010] i.e. the name of a village called *Maʕqabu*. The genitive form of Ugaritic *mʕqby* can therefore be vocalized as /Maʕqabīji/, which is a nearly exact match for *ma*[??]*-ka*[??]*-pi*[??]*-ji*[??]. The interpretation is ingenious, unambiguous and leads to a reading of the totality of line A.04 as "Aneni from (the town of) Maʕqabu".

37*b*-71-100-40 → **37*b-*ja*[?]*-ni*[??]*-***40* → **37*b-*ja*[?]*-ni*[??]*-ji*[??] and 37*b*-04-100 → **37*b-*ta*[??]*-ni*[??] (A.09)
The above interpretation of -*40 = *-ji*[?] as a toponymic adjective suffix and the equation of *ma*[?]*-ka*[?]*-pi*[?]*-ji*[?] with the Ugaritic demonym *mʕqby* encourage the identification of 37*b*-71-100-40 → **37*b-*ja*[?]*-ni*[??]*-ji*[??] along the same lines. In this way, **37*b-*ja*[?]*-ni*[??]*-ji*[??] implies a default toponymic adjective */Cijanīj-/ from a place-name */Cijan-/ (where C = unkown consonant). I was only able to locate one toponym with this phonological structure in the reference Ugaritic dictionary: the recurrent *syn* = [URU]*sí-ia(-an)-ni/a*[(ki)]. This refers to Siyannu, a polity not far south of Ugarit that held some political importance.[1011] Its demonym, *syny*, is attested twice.[1012] Because alphabetical *s* = syllabic *s* most likely represents an affricate /ʦ/ in Ugaritic (5.4.1.1), the pronunciation of the genitive form of *syny* can be reconstructed as */ʦijānnīji/. If this is the word underlying *37b-*ja*[?]*-ni*[??]*-ji*[??] then it can be transliterated as *zi*[??]*-ja*[?]*-ni*[?]*-ji*[??], with the assignment of an experimental *zi*[??]value to CM 37b.

Reinforcing the validity of this reading now depends on our ability to provide an equally suitable interpretation for 37b-04-100 → *zi*[??]*-ta*[?]*-ni*[?]. The alphabetical documention of Ugarit offers us the personal name *s*/*śdn*, but its etymology is uncertain

[1009] It is also worthwhile noticing that there are seven instances of sign 47 as a phonogram in Linear A, two sequence-initially and three after (C)*i*: *de-su*-[•]-*47-*te* (ARKH 4 a.3-4); *i-***47*[(ARKH b.3); *qa-mi-***47-na-ra* (KN Zf 31); **47-ku-na* (ZA 15 a.1); **47-nu-ra-ja* (HT 115 a.1);]*pa*$_3$*-si-**47 (MIL Zb 1);]*304+*pa-da-**47-*ku*[(HT 127a.3).
[1010] *DULAT*: 521-522.
[1011] Singer (1999: 662-666); *DULAT*: 774. Nahm informs me in a personal communication (Nov. 2012) that he was less convinced of his reading of this sequence as *tu-ya-ni-yi* (cf. Nahm 1981: 61, leading to no identification) and that in view of the local importance of Siyannu he concluded independently that "si-ya-ni-yi" makes more sense.
[1012] See *DULAT*: 774.

and at Ugarit we find no syllabically-written version to assist with the vocalization.[1013] However, it may well correspond to the Luwian personal name *Zidanni* 'Manny',[1014] attested for example at Emar as ^{m}*Zi-da-an-na*.[1015] Notice that in the Ugaritic tradition *sdn* appears as the name of a semi-divine ancestral king, which would be a strange role for an Anatolian name, but this needs not be the same as *śdn*. As we have seen, in the Ugaritic orthography *ś* seems to be used primarily when a foreign affricate is represented (5.4.1.1) and thus suitably hints at a non-Semitic name. We have also seen in 5.4.1.4 that Anatolian names, both Luwian and Hittite, are well attested at Ugarit.[1016] That this name stands in isolation and is not followed by a Semitic patronymic may be seen as further evidence, albeit circumstantial, that the identification is correct.

[[••]]25-06-100-40 → [[••]]*ka*$^{??}$-*pa*$^{??}$-*ni*$^{??}$-*ji*$^{?}$ (B.12)

Nahm considered the first sign difficult and read *?-pa-ni-yi*, so he only noted in passing the similarity to Ugaritic *šbny* /Šubanīji/,[1017] which is a geographical apellative referring to the place name *šbn* = ^{URU}*šu/šú-ba-nu/i* ~ ^{URU}*šub-ba/bá-ni*.[1018] Since the reading *ka*$^{?}$-*pa*$^{?}$-*ni*$^{??}$-*ji*$^{?}$ seems relatively secure, sign 25 = *ka*$^{?}$ being written over an erased sign we can now read [[••]]*ka*$^{??}$-*pa*$^{??}$-*ni*$^{??}$-*ji*$^{?}$ (see Appendix A). *ka*$^{??}$-*pa*$^{??}$-*ni*$^{??}$-*ji*$^{?}$ is comparable to Ugaritic *gpny*, an adjective formed on the place name *gpn*. If *gpn* is the equivalent of ^{URU}*gup-na*,[1019] then the vocalism cannot be reconciled with the Cypro-Minoan spelling and the comparison does not yield a valid identification. However, sometimes *gpn* has been interpreted as a different yet homophonous word meaning '(vine-)stock, vine, vineyard', to be compared with Eblaitic *ga-ba-na-na-um*$_x$ /gapnānum/,[1020] Hebrew *gpn*, Syriac *gupnō* and Arabic *jafn*. This form "competes" with syllabic *ga*-BI-*ni*, which is used as a designation of a field in a legal document.[1021] Some scholars read it as /gapinu/, allegedly from earlier */gapnu/ 'vine', but Huehnergard has pointed out that there are no additional examples of vocalic anaptyxis in Ugaritic C*a*CC forms like **gapnu*.[1022] He therefore argues for a C*a*C*i*C vocalization: */gabīnu/ 'hillock(?)'. It is evident that neither */gapinu/ nor */gabīnu/ could provide the basis for CM *ka*$^{?}$-*pa*$^{?}$-*n*-$^{??}$. The only possible way in which Ugaritic *gpn* and *gpny* could be connected to the Cypro-Minoan form is if it contained instead */gapn-/. The sequence must be considered without a good Ugaritic parallel.

[1013] *DULAT*: 753.
[1014] Laroche (1966: nos. 1552-1553), already cited by Grøndahl (1967: 291) in the analysis of Ugarit names containing Luwian *zida/i-* 'man'. For the semantic interpretation, see Melchert (2013: 49).
[1015] Pruzsinszky (2003: 819).
[1016] See Grøndahl (1967: 268-297).
[1017] Nahm (1981: 61) inaccurately writes †*śbny*.
[1018] *DULAT*: 805-806.
[1019] *DULAT*: 305.
[1020] Cf. *DULAT*: 304.
[1021] Huehnergard (2008: 115).
[1022] Huehnergard (2008: 115-116).

5.4.2.4.4 Stage 4: Sequences with CM 35 and 74

102-74-82-51 → *a*[?]*-wi*[??]*-sa*[??]*-pi*[??] (A.02); 38-35-100 → *e*[?]*-wi*$_2$[??]*-ni*[??] (A.07); <u>102</u>-35-82-51 → <u>*a*</u>[?]*-wi*$_2$[??]*-sa*[??]*-pi*[??] (A.08); 102-74-75-51 → *a*[?]*-wi*[??]*-ra*[?]*-pi*[??] (B.17)

Three of these sequences have strings that repeat, possibly denoting shared onomastic elements: *a*[?]*-wi*[??]- and *-sa*[??]*-pi*[??]. In addition, two of them share sign CM 74 → *wi*[??] and the other two share CM 35 → *wi*$_2$[??]. Unlike the sequences in Stages 2 and 3, these sign-groups have been transliterated with experimental values in their totality, yet the readings of CM 74 and 35 consist of similar values, with that of CM 35 being particularly fragile (see 3.4.6). For these reasons, analyzing the four sequences together through a combinatorial approach may prove fruitful, as any value assigned to CM 74 and 35 can only be validated if it produces plausible identifications for the two sign-groups where each occurs.

The safest starting point is the conjunct analysis of 102-74-82-51 → *a*[?]*-wi*[??]*-sa*[??]*-pi*[??] and 102-74-75-51 → *a*[?]*-wi*[??]*-ra*[?]*-pi*[??]. The reasons are threefold: both comprise four signs (unlike 38-35-100 → *e*[?]*-wi*$_2$[??]*-ni*[??]), which helps avoid ambiguity in the onomastic identifications; they diverge only in their third sign or, put differently, their first two graphemes (102-74-) are the same and likely represent the same onomastic element, narrowing down the number of possible parallels; and, finally, they do not include dubious signs (unlike <u>102</u>-35-82-51 → <u>*a*</u>[?]*-wi*$_2$[??]*-sa*[??]*-pi*[??]).

102-74-82-51 → *a*[?]*-wi*[??]*-sa*[??]*-pi*[??] (A.02) and 102-74-75-51 → *a*[?]*-wi*[??]*-ra*[?]*-pi*[??] (B.17)

With *a*[?]*-wi*[??]*-sa*[??]*-pi*[??] and *a*[?]*-wi*[??]*-ra*[?]*-pi*[??] we look for personal names that meet two conditions: (1) they are most likely compounds where, for reasons of phonological regularity, the element corresponding to *a*[?]*-wi*[??]- should reflect /(H)a$^{(C)}$Bi$^{(C)}$-/ (H = any pre-velar fricative; $^{(C)}$ = possibly omitted consonant in coda; B = any labial); (2) the componenets underlying *sa*[??]*-pi*[??] and *-ra*[?]*-pi*[??] should be known to compound with whatever *a*[?]*-wi*[??]- represents. Notice that any interpretation advanced for *-sa*[??]*-pi*[??] might account for <u>102</u>-35-82-51 → <u>*a*</u>[?]*-wi*$_2$[??]*-sa*[??]*-pi*[??] as well, but it need not be the case, as the string may represent different things in the two sequences.

At first sight, *-ra*[?]*-pi*[??] is suggestive of two Ugaritic onomastic elements frequently used in theophoric names with a first element that is di- or trissylabic and begins with *a-* or *ʕ*(*a*)-. The first is *ršp*, the name of the god of pestilence, of variable vocalization. The second is *rpu* (genitive *rpi*), the name of the divine ancestor of the Ugarit dynasts or an eponymous deity of these divine ancestors that literally means ‘Healer’ and is vocalized as /Rāp(i)ʔu/. The list of personal names that contain these elements and agree with the characteristics just mentioned includes: *abršp*, *a/iḫršp* ~ *a/iḫr<u>t</u>p* = ŠEŠ.^{d}MAŠ-MAŠ, *ʕbdršp* = ÌR-*ir-šap* ~ ÌR-*ra-ši-ip* and *ʕdršp*,[1023] alongside

[1023] *DULAT* 13, 40, 151, 748.

abrpu = A-bir$_x$*-pu-u*/*pí-i*/*pa-a* and *ʕmrpi = A*(*m*)*-mu-ra-pí* /ʕammurapʔī/.[1024] We thus observe that both divine names appear in names beginning with Ugaritic *ab = a-bu* /ʔabu/ 'father; ancestor':[1025] *abrpu = A-bir*$_x$*-pu-u* 'My father is Rapʔu' alongside *abršp* 'My father is Raš(a)p(u)'. At first glance, this suits relatively well the phonological structure expected from *a*$^{?}$*-wi*$^{??}$-, but we need to discuss the phonological configuration of these two personal names in order to assess whether they are valid matches for our Cypro-Minoan sequences.

As the god of pestilence, *ršp* (^{d}MAŠ-MAŠ in Sumerograms) corresponds to the well-attested West-Semitic deity known in the literature as Reshef or Rašap and identified in the divine lists of Ugarit with Mesopotamian Nergal, god of the Netherworld.[1026] Its vocalization in the early 2nd millennium Amorite onomastics and later in the same millennium at Ugarit follows a bisyllabic C*a*C*a*C pattern, precisely Rašap.[1027] At Ugarit, however, there are other nominal patterns seen in names such as *ršpy = Ri-iš-pa-ia*,[1028] *ʕbdršp* = ÌR-*ir-šap* ~ ÌR-*ra-ši-ip*[1029] and *Nu-ma-re-ša-ip*.[1030] The example of *ʕbdršp* = ÌR-*ir-šap* 'servant of DN' attests to a form /Iršap/ that needs discussion. *Iršap* has been interpreted as the Hurrianized version of *Rašap*, with a prothetic *i*- as a result of the prohibition against word-initial /r/ in Hurrian.[1031] Thus, for Grøndahl, *-ir-šap* could be a Hurro-Semitic hybrid form, which would not be out of place in the sociolinguistic milieu of Ugarit. However, because ÌR-*ir-šap* coexists with the variant ÌR-*ra-ši-ip* she also considered the alternative that the name might be fully Semitic: ÌR-*ir-šap(-pa)* /ʕAbdi-ršap/ vs. ÌR-*ra-ši-ip* /ʕAbdi-rašip/. Considering *nu-ma-re-ša-ip*, another anthroponym from Ugarit, Grøndahl hypothesized that the vowel in the first syllable of the divine name was short and eventually elided: /Rašáp/ > /Ršáp/.[1032] This phenomenon seems to have been widespread in the West-Semitic languages, judging from the aforementioned Hurrian *Iršap* (< Semitic /Ršáp/) and later Punic *ʔršp*, in which the spelling with *ʔ*- betrays a prothetic vowel appended to facilitate the pronunciation of a word-initial cluster /rš-/.[1033] The form /Ršáp/ can also account for the name *ri-iš-pa-ia*, if we assume the development */Ršáp-ya/ > */Ršp-á-ya/ > /Rəšpá-ya/, with an anaptyctic vowel written with *-i*- inserted to break up the difficult cluster. This idea is followed by Sanmartín, who also interprets as anaptyctic the *-i*- vowel of -

[1024] *DULAT*: 12, 165-166, 743.
[1025] *DULAT*: 2-3.
[1026] Huffmon (1965: 263).
[1027] Huffmon (1965: 263) and Gelb (1980: 177, 347) apud Izre'el (1999: 64-65). This type of stem pattern is known in Semitic linguistics as *paras* or *qatal*.
[1028] Grøndahl (1967: 51, 181); *DULAT*: 748.
[1029] Grøndahl (1967: 105, 181); *DULAT*: 144. The accusative form is spelled ÌR-*ir-šap-pa*.
[1030] Grøndahl (1967: 181-182).
[1031] Huehnergard (1987b: 719, n. 24). On the Hurrian phonotactic "rule", see Giorgieri (2000: 185, fn. 42).
[1032] Grøndahl (1967: 227).Though notice that Grøndahl's use of the accent suggests that she also saw this hypothetical syncope as acting on an unstressed syllable.
[1033] Grøndahl (1967: 227) and Izre'el (1999: pages).

ra-ši-ip < /Rašp/ and the *-e-* of *-re-ša-ip* < /Ršáp/.[1034] To understand the prevalence of this array of variants in the onomasticon of Ugarit we must recall that personal names lead a life of their own. Conservative or archaic forms can coexist with variants more alike spoken language, standard forms can concur with dialectal ones, and so forth. Moreover, at Ugarit it is not always easy to distinguish between genuine Ugaritic names from ones drawn from other Semitic languages.

The implication is that at least two realizations of *abršp* are possible at Ugarit: */ʾAbīršap/ and */ʾAbīraš(ə)p/. At Emar, where a West-Semitic dialect was also spoken, we find a similar situation, whereby *A-bi-ir-ša*$_{10}$*-ap-* /ʾAbīršap/ is found alongside *A-bi-ra-šap* /ʾAbīrašap/.[1035] Notice that the Emariot *A-bi-ra-šap* might conceal /ʾAbīrašəp/, or even /ʾAbīrašp/, as the syllabic cuneiform script has no way of representing faithfully a word-final cluster /-šp/. Thus, Cypro-Minoan *a*$^{?}$*-wi*$^{??}$*-sa*$^{??}$*-pi*$^{??}$ could stand for the first of these versions, /ʾAbīršap/. The omission of the sonorant /r/ in coda would be a regular strategy for spelling the heterosyllabic cluster /-rš-/: *-sa*$^{??}$*-pi*$^{??}$ for /V-^{r}šap/. For reasons of consistency, *a*$^{?}$*-wi*$^{??}$*-sa*$^{?}$*-pi*$^{??}$ /ʾAbīršap/ ought to be in the genitive, but this would parallel situation with *i*$^{?}$*-li*$^{?}$*-ma*$^{??}$*-li*$^{?}$*-ki*$^{??}$ for /ʾIlīmalik/, with final *-i* as an empty vowel.

The best match for Cypro-Minoan *a*$^{?}$*-wi*$^{??}$*-ra*$^{?}$*-pi*$^{??}$ is **abrpi*, the genitive of the attested *abrpu*. In alphabetic Ugaritic onomastics, *-rpi* can correspond to two words. The first is found in the personal name *ʕmrpi = A(m)-mu-ra-pí* 'The Divine Ancestor is my Healer', which conceals /rapʔī/< */rapʔ-yi/ 'my healer'. The *-rpi* that concerns us is the genitive of *-rpu,* /rapʔu/ 'Healer', reflecting a syncopated C*a*C*i*C pattern */rapiʔu(m)/.[1036] The problem is that the syllabic spellings of *abrpu*, namely *A-bir*$_{x}$*-pu-u* (nominative) and *A-bir*$_{x}$*-pí-i* (genitive), imply that the name was vocalized as /ʾAbīrpʔi/ as a result of (stress-driven?) syncope of medial *-a-*.[1037] For reasons of regularity we should not assume that Cypro-Minoan *a*$^{?}$*-wi*$^{??}$*-ra*$^{?}$*-pi*$^{??}$ can spell /ʾAbīrpʔi/, as it not only would contradict the apparent omission of liquids in coda in other cases (cf. *a*$^{?}$*-wi*$^{??}$*-sa*$^{??}$*-pi*$^{??}$ and *ma*$^{??}$*-ki*$^{??}$ above), but also it would imply the plenary spelling of /r/ with *ra*, whose vocalism disagrees with the preceding and following syllabograms (C*i*).

This obstacle can be circumvented only by making one of two assumptions. The first option is to posit that the attested name /ʾAbīrpʔi/ coexisted with a more archaic */ʾAbīrapʔi/, consistent with the Amorite *A-bi-ra-pí* from Hazor[1038] and the *A-bi-ra-a-bi* from Alalaḫ (possibly Level IV = 15th through 14th centuries BCE?).[1039] The second

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[1034] Sanmartín (1991: 203). I would not exclude that such vowel is simply a schwa [ə] that could be either omitted from writing or spelled with *i*. It is intriguing that both (ÌR-)*ra-ši-ip* and (*nu-ma-*)*re-ša-ip* occur in RS 20.07, a list of names that looks like a school tablet (see the edition in Nougayrol 1968: 191-192 and the comment by Münnich 2013: 144) and may therefore have been written by an unexperienced scribe.

[1035] Pruzsinszky (2003: 38-39, 55-58). The phonological notations are mine. Cf. also Amorite *A-bi-ra-ša-ap* at Mari (Huffmon 1965: 20, 154, 263).

[1036] Attested in the Amorite personal name *Ra-pí-ú-um*, from Mari (Huffmon 1965: 264).

[1037] Grøndahl (1967: 18).

[1038] Huffmon (1965: 20, 264).

[1039] AIT 201:5 (see von Dassow 2008: 413)

possibility is that *a*$^{?}$-*wi*$^{??}$-*ra*$^{?}$-*pi*$^{??}$ corresponds to *abršp* as well, but in its second variant, the syncopated */ʾAbīrašp/. I think the latter is less problematic.

Before we can finalize the discussion of these forms, there is one point that needs clarification. If *a*$^{?}$-*wi*$^{??}$-*sa*$^{??}$-*pi*$^{??}$ (A.02) and *a*$^{?}$-*wi*$^{??}$-*ra*$^{?}$-*pi*$^{??}$ (B.17) represent /ʾAbīršap/ and /ʾAbīrašp/ or /ʾAbīrapʔi/, respectively, then at first glance they might collide with *ko*$^{??}$-*sa*$^{??}$-*ra*$^{?}$-*pi*$^{?}$ → /Kōsārʾabī/. In question is the apparent spelling of Semitic /b/ with CM *p*$^{??}$ in one occasion and CM *w*$^{??}$ in two others. The problem is not so much the phonographic value of the Cypro-Minoan series: we have seen that *p*$^{??}$ most likely represents a bilabial stop, whereas *w*$^{??}$ possibly came to represent a voiced labial fricative, /v/ or /β/, so, in theory, both would be optimal choices for rendering /b/. What might inspire misgivings is the use of two different syllabograms, for the same sound, in the same document. Such doubts can be resolved by noticing that a similar situation occurs with the writing of Hurrian personal names in the local Ugaritic script. Thus, the alphabetic tablet RS 11.858 contains the Hurrian names *ibrmḏ* /Evri-muza/ and *iwrḫt* /Evri-ḫuta/,[1040] which means that the same scribe spelled the foreign [v] of /Evri/ with *b* and *w* in the same document. In addition, the spelling strategies seen in RASH Atab 004 may reflect some logic: if the proposed interpretations are correct, in *a*$^{?}$-*wi*$^{??}$-*sa*$^{??}$-*pi*$^{??}$ and *a*$^{?}$-*wi*$^{??}$-*ra*$^{?}$-*pi*$^{??}$ we see that CM *p*$^{??}$ is already used for the Semitic voiceless /p/, so the choice of using *w*$^{??}$ for /b/ may have responded to a need to distinguish the two bilabial stops in these names, which are distinguished by the feature [VOICE].

38-35-100 → *e*$^{?}$-*wi*$_2$$^{??}$-*ni*$^{?}$ (A.07) and <u>102</u>-35-82-51 → *<u>a</u>*$^{?}$-*wi*$_2$$^{??}$-*sa*$^{?}$-*pi*$^{??}$ (A.08)

In Stage 2, I have proposed tentatively that *e*$^{?}$-*wi*$_2$$^{??}$-*ni*$^{?}$ corresponds to a Hurrian name /Even(n)i/, leading to suspicions that the value of CM 35 might have to be revised to *we*$^{??}$. Unfortunately, neither *<u>a</u>*$^{?}$-*wi*$_2$$^{??}$-*sa*$^{?}$-*pi*$^{??}$ nor *<u>a</u>*$^{?}$-*we*$^{??}$-*sa*$^{?}$-*pi*$^{??}$ lead to any convincing identification <u>102</u>-35-82-51. For reasons of orthographic regularity, we must exclude the possibility that *<u>a</u>*$^{?}$-*wi*$_2$$^{??}$-*sa*$^{?}$-*pi*$^{??}$ reflects a second instance of the name /ʾAbīršap/, as this would lead to the aberrant idea that Ugaritic /ʾabī/ 'my father' was spelled in not two, but three different ways (*-a-pi*, *a-wi-* and *a-wi*$_2$-) in the same document. In addition, the reading of the first sign of <u>102</u>-35-82-51 is not entirely certain. Paleography, as well as the comparison with the rest of the sequences in the tablet, support the idea that this is a poorly executed CM 102 (see Appendix A), lacking only its central horizontal stroke, but there is still the least likely, yet possible alternative that it is 24 = *le*$^{?}$. Even so, reading the sequence as <u>24</u>-35-82-51 → *<u>le</u>*$^{?}$-*wi*$_2$$^{??}$-*sa*$^{?}$-*pi*$^{??}$ ~ *<u>le</u>*$^{?}$-*we*$^{??}$-*sa*$^{?}$-*pi*$^{??}$ yields no identification.

We can take one step back and restart the analysis with <u>102</u>-35-82-51, the longer sequence, by transliterating it as *<u>a</u>*$^{?}$-35-*sa*$^{?}$-*pi*$^{??}$, i.e. applying only the experimental values that have yielded plausible identifications. If we do so, we can begin by asking what might *-sa*$^{?}$-*pi*$^{??}$ represent in this name. The first possibility to explore is that *-sa*$^{?}$-

[1040] Cf. Cunchillos et al. (2003: 876-877). The identifications of the names are certain, as both are attested syllabically at Alalaḫ (Von Dassow 2008: 438).

pi[??] represents /-ršap/ as proposed for 102-74-82-51 → *a*[?]*-wi*[??]*-sa*[??]*-pi*[??]. The only other onomastic element I could detect that contains a sibilant, a labial and similar vocalism is *ṯb = šab-*, attested e.g. in *ṯbil = ša-bi*-DINGIR(*-li*), *ṯbʕnq = ša-ba-i-ni-qi*,[1041] but it seems to be restricted to the first part of personal names. The idea that *a*[?]-35-*sa*[?]*-pi*[??] represents /-ršap/ also yields no matches with the material from Ugarit. As we have seen, the attested names containingRšap as second element and a dissyllabic word as the first include *abršp*, *a*/*iḫršp* = ŠEŠ.[d]MAŠ-MAŠ, *ʕbdršp* = ÌR-*ir-šap* / ÌR-*ra-ši-ip* and *ʕdršp*. Besides *ab-* /ʾabī/ 'my father', the other three initial elements of these theophoric names are: *a*/*iḫ-* = *a-ḫi-* /ʾaxī/ 'my brother',[1042] *ʕbd-* /ʿabdu/ 'servant' and *ʕd-*. The meaning of the latter is not wholly certain, but if it corresponds to syllabic *ad-du* 'Storm-god' (cf. *ʕdmlk* vs. *Ad-du-ma-lik* from Alalaḫ) as proposed by Grøndahl,[1043] then *ʕdršp* could reflect */ʿAdduršap/ 'The Storm-God isRšap'. Thus, *abršp* and *a*/*iḫršp* are obviously implausible,[1044] but we could attempt to equate *a*[?]-35- with /ʿAddu/ by tentatively assign the value *tu*[??] to CM 35. Yet even then 38-35-100 → *e*[?]*-tu*[??]*-ni*[?] would yield no identification, not to mention the disadvantage that there is already a candidate for *tu*[??], CM 61 (cf. section 4.3).

Ultimately, the problems in assessing the readings 38-35-100 → *e*[?]*-wi*$_2$[??]*-ni*[?] and 102-35-82-51 → *a*[?]*-wi*$_2$[??]*-sa*[?]*-pi*[??] are due to the shortness of the former. On its own, it can match certain names known from the cuneiform sources, but the chances of accidental correspondences make it unwarranted to use any such identification to ascertain the value of CM 35. In the absence of other evidence, it seems advisable to treat both sequences as unidentified and to maintain *we*[??] as a *strictly experimental* value for the sign in question. This value is preferrable to *wi*$_2$ as it was the that yielded the possible identification of 38-35-100 → *e*[?]*-we*[??]*-ni*[?] with Hurrian /Even(n)i/.

Stage 5: Doubtful sequences

104-25-06-09 → *i*[?]*-ka*[??]*-pa*[??]*-li*[?] (A.03) or *i*[?]*-a*[??]*-pa*[?]*-li*[?] (A.03)

The fate of this sequence unfortunately depends on the second syllabogram, of very difficult reading. Formerly listed as CM 58, Ferrara considers it an instance of CM 25, which I consider here with much caution (see Appendix A). I do not preclude reading it as 102, or even as a hitherto unknown sign—in which case the number CM 58 would be justified. Conversely, because CM 27 = *si*[??] appears in line B.17 with a clearly different shape, we need to dismiss Saporetti's reading of 104-25-06-09 as *i-si-ba-li* by Saporetti,[1045] who wanted to see in it the Ugarit name *išbʕl = i-ši-*[d]U /ʾIši-baʿlu/.[1046]

[1041] *DULAT*: 896-897.
[1042] *DULAT*: 34.
[1043] Grøndahl (1967: 106), citing Wiseman (1953: 126).
[1044] Because of orthographic regularity we would expect */ʾAxīršap/ 'My brother isRšap' to be written as **a*[?]*-ki*[??]*-sa*[?]*-pi*[??] and /ʿabdīršap/ as **a*[?]*-pi*[??]*-ti*[?]*-sa*[?]*-pi*[??]. The former spelling would involve a phonetic value that is already allotted to another sign while the latter has one too many signs.
[1045] Saporetti (1976: 102, fn. 88).
[1046] Cf. Grøndahl (1967: 31); *DULAT*: 116.

The identification of the final string *-pa*[??]*-li*[?] with the Ugaritic word *bʕl = ba-a-lu* /baʕlu/ ‘lord’, or a deity of the same name, was one of the first pieces of decipherment propounded by É. Masson, along with a compelling account of the orthography.[1047] Since Cypro-Minoan lacked the means to transcribe a pharyngeal fricative /ʕ/, the West-Semitic stem /baʕl-/ had to be rendered has *-pa-l*V. She brilliantly adduced typological parallels from the Anatolian Hieroglyphic[1048] and Cypro-Greek syllabaries. The former is a logo-syllabary whose phonograms can only represent open syllables like Cypro-Minoan, hence we have, for example, a biscriptal seal from Tell Meškeneh/Emar where we find the Semitic personal-name /Dagan-Baʕl/ spelled as [d]*da-gan*-EN in the Mesopotamian cuneiform script and as *ta-ka-pa-li* in Anatolian hieroglyphs. Other cases of Anatolian hieroglyphic spellings of this word in names include *pa-li-ma-li* for */Baʕl-Malik/ or similar and *pa-la/i/u-ka+ra/i-tá* for */Baʕl-qarrād/.[1049] The Cypro-Greek example refers to *a-pu-tu-pa-lo*, corresponding to the Phoenician name *ʕbdbʕl* ‘Servant of *Bʕl*’, although in this case what we have is the Hellenized version of the name: /Abdubalō/, the genitive of */Abdubalos/.[1050]

Beyond this analysis, the sequence 104-25-06-09 as whole will be considered unidentified here due to the uncertain identity of the second syllabogram. I will therefore limit myself to outlining the possibilities for it. If its correct reading is *i*[?]*-ka*[??]*-pa*[?]*-li*[?], we might compare the Amorite *Iš-ḫa-*[*b*]*a-al* from the site of Khafajah/*Tutub* (Central Mesopotamia),[1051] probably reflecting /Išxa- Baʕl/, but a comparable name is so far missing at Ugarit. If, on the other hand, the reading of our sequence were rather *i*[?]*-a*[??]*-pa*[?]*-li*[?], then we could compare *iybʕl* /ʾIja-Baʕlu/ ‘Where is Baʕlu?’, which is documented at Ugarit.[1052] Still, the spelling *i-a-* is somewhat unexpected for the first element of the name, which for reasons of regularity should perhaps be *i-ja-*. Even less likely is */Jam-baʕlu/, a virtual cognate of the Canaanite name *Yam-Baʕli* (*Ia-am-pa-li*), attested at Alalah.[1053] On one hand, the initial syllable would probably require CM *ja*[??]; on the other hand, it is difficult to know whether Cypro-Minoan -V-*p*V- is a viable rendering of Semitic -V*mb*V-.

27-69 → *si*[?]*-ja*[??] (B.17)

If the reading of the second sign is correct, this would be the only example of form CM 69 in this inscription. Could this be a damaged instance of form CM 71?[1054] If the transliteration is accurate, the only comparandum available is Ugaritic *šiy*. Unfortunately, there is no agreement on the interpretation of this word, the different proposals including an adjective ‘assassin’ and a substantive such as ‘running water’ or

[1047] É. Masson (1973: 42, 1974: 41).
[1048] É. Masson (1978b: 812).
[1049] Beyer (2001: 122, 128) apud Cohen (2010: 39-40).
[1050] See *DGAC*: 381-382, 794-795, citing *ICS*[2] 318e.
[1051] For this name, see Huffmon (1965: 216), citing R. Harris (1955: nos. 39.14; 75.[14]). *Iš-ḫa-* is taken to reflect the Semitic root **yṯʕ* ‘to help’.
[1052] *DULAT*: 134. For Ugaritic *iy* = /ʾija/ ‘where’ and its use in personal names cf. Sivan (1984: 200) and *DULAT*: 133.
[1053] AIT 154:35' (Wiseman 1953) apud von Dassow (2008: 495).
[1054] See section 2.3.15 and Appendix A.

'juice' (cf. Hurrian *šiye-* 'water').[1055] None would make much sense here. This sign-group remains obscure.

55-70-••-06-96-37b → *ma*[??]*-ki*[??]*-••-pa*[??]*-ri*[?]*-zi*[??] (B.17)

It is possible that this long sign-group contains two sequences, with a lost divider somewhere in the portion where the tablet is damaged. Since we cannot confirm or refute this possibility, the analysis of this sequence is rendered complicated.

The two initial signs, if the first is correctly restored, point to Ugaritic /malki/, e.g. the genitive of the word for king, which here could part of a personal name. After them comes the damaged area, certainly with a lost syllabogram. As regards the latter string of the sequence *-pa*[??]*-ri*[?]*-zi*[??], I a search for Ugaritic names or words ending in *-rs*/*ś*, possibly vocalized as /-aritsi/, and therefore comparable to it, yielded only two satisfactory results. The first is the personal name *prs*, whose vocalization is uncertain in the face of a lack of syllabic transcriptions. However, should it be related to the names *brs*/*zn* and *prsn* = *pur-sà-nu* /purtsanu/ and *brs*/*ś*(*m*) = *bur-sà-mi*,[1056] then we are looking at a form /purz-/ that cannot fit here. The second comparandum is the dry measure *prs*/*ś* (= ½ gur, so approximately 150 l.), which, based on the Akkadian *parīsu*, know from Alalakh and Hattusa, and Hurrian *parizzate*,[1057] is to be vocalized as /parītsu/ (genitive /parītsi/). This fully agrees with our string *-pa*[??]*-ri*[?]*-zi*[??]. Assuming the latter is to be segmented from *ma*[??]*-ki*[??]*-••-*, how would we understand the presence of the name of a dry measure in what seems to be a list of names? The Ugaritic text RS 17.049 contains a "list of traders" (*spr mrkm*), where a series of names is given, in many cases following the pattern *bn* PN 'son of PN'. Most of the names listed are followed by the word *lṯḥ*, which signifies a dry measure, but one is followed by the word *prs*. The line in questions reads as follows: *bn slʕn prs* '(to) the son of Zilʿānu, a *p.*-measure.'[1058] Curiously, two entries later, in what is the last written line of the tablet, we find sign 06 = *pa*[??] in isolation, which is reminiscent of the use of the cuneiform sign *pa* as an abbreviation for the Akkadian word *parīsu* at Ugarit.[1059]

While the two parallels are attractive, it seems disconcerting to think that B.17 and B.19 would be the only entries of the tablet with any possible economical reference. It seems farfetched that the type of ration being assigned to each individual listed previously would be specified only in the antepenultimate line and then repeated in abbreviated form in the last one, especially as the line in between (B. 18) seems to list another individual with its patronymic (*mo*[??]*-**92*-ni*[?] | *pi*[??]*-lu*[?] | *ma*[??]*-ki*[??]). More probably, then, this sequence contains yet another description of a person.

82-25/58-55-09-70 → *sa*[??]*-lu*[??]/58 *-ma*[??]*-li*[?]*-ki*[??] (B.19)

This must be a personal name whose second component is /malik/, as in the case of 104-09-55-09-70 → *i*[?]*-li*[?]*-ma*[??]*-li*[?]*-ki*[??]. For Nahm, the second syllabogram of the sequence

[1055] *DULAT*: 798.
[1056] Grøndahl (1967: 287, 289, 298-299); *DULAT*: 240-241; 682-683. Cf. also Huehnergard (2011: 386).
[1057] *DULAT*: 682.
[1058] Cunchillos *et al*. (2003: 1087-1088). For the name see *DULAT*: 760-761.
[1059] Huehnergard (2011: 377).

and the second of 104-25-06-09 are the same (CM 58) and have the value *ši*. Thus, he transliterates 82-25-55-09-70 as *ša-ši-ma-li-ki* and seeks to identify it with the Akkadian personal name *Šamši-Malik* 'My sun is the god Malik'.[1060] However, the sign not only proves difficult to read, but also it cannot be identical in value with CM 27 → si??, not to mention that the name *Šamši-Malik* is not attested as such at Ugarit.

Elsewhere,[1061] I have compared this sequence to ^{d}UTU.LUGAL 'The Sun-god is king', a personal name that Nougayrol read originally as Akkadian (Šamaš-šarru),[1062] but nowadays is taken to equate with Ugaritic *špšmlk* i.e. /Šapšu-malku/ or /Šapšu-malik/.[1063] My proposal was not just based on the relative phonographic similarity of the names, but also on the fact that ^{d}UTU.LUGAL is mentioned as being the teacher of the scribe Balazki, who signs one Akkadian letter (RS 20.32) found in the Archive of Rap'ānu, the same where our RASH Atab 004 was found.[1064] Izre'el places the period of activity of ^{d}UTU.LUGAL in an earlier phase of the building, namely in the 14th century BCE.[1065] It is also intriguing that our sequence Cypro-Minoan *sa*$^{??}$-*lu*$^{??}$/58-*ma*$^{??}$-*li*$^{?}$-*ki*$^{??}$ occurs in the last line of the tablet, which possibly acts as a colophon or a signature of some sort. Nahm reads the following sequence (92-11-96) as *sa-pe-ri* and attempts to see in it the Semitic word for 'scribe' (cf. Ugaritic *spr*),[1066] but the reading is so problematic that it should be discarded. All things considered, even if the second sign of *sa*$^{??}$-*lu*$^{??}$/58-*ma*$^{??}$-*li*$^{?}$-*ki*$^{??}$ is not *lu*$^{??}$, it would be hazardous to identify the sequence with /Šapšu-malik/, as we should expect /Šapšu/ to be spelled with three syllabograms: ***sa-pu-su*, or similar.

Is there any viable alternative? The only two anthroponyms I could locate in the documents from Ugarit that begin with a coronal fricative and contain *mlk* as second element are *šmmlk*, probably vocalized as /Šumu-malik/ 'My name is Malik'[1067] and *špšmlk* itself.[1068] Since we would expect the genitive form of *šmmlk* to be spelled as ***su-mu-ma-li-ki* in Cypro-Minoan, it is not a convincing match for *sa*$^{??}$-*lu*$^{??}$/58-*ma*$^{??}$-*li*$^{?}$-*ki*$^{??}$.

The identity of the whole sequence will perforce remain uncertain, although I think the identification of its second element as /malik/ is acceptable.

92-11-96 | 06 ¶ or *92 ⌊ 96 | 06 ¶ → *92-*pe*$^{??}$-*ri*$^{?}$ | *pa*$^{??}$ ¶ or *92 ⌊ *ri*$^{?}$ | *pa*$^{??}$ ¶ (B.19)

The interpretation of this last portion of the tablet faces three obstacles: (1) the value of CM 92 remains obscure; (2) the reading of the second sign is doubtful; and (3) at least the last two syllabograms might be abbreviations. I therefore forego any attempt at an

[1060] Nahm (1981: 62).
[1061] Valério (2013a: 22).
[1062] *PRU* III: xxxix apud Izre'el and Singer (1991: 11).
[1063] Besides Izre'el and Singer (1991: 11), see e.g. Lackenbacher (2002) and *DULAT*: 838.
[1064] Izre'el and Singer (1991: 11). See also
[1065] Izre'el and Singer (1991: 11).
[1066] Nahm (1981: 62). For the Ugaritic word see *DULAT*: 767.
[1067] Grøndahl (1967: 193-194); *DULAT*: 555, 822, 827.
[1068] *DULAT*: 555, 836, 838.

analysis (see the previous sequence for a comment on Nahm's attempted interpretation of 92-11-96 as the word for 'scribe'). For the difficult possibility that the final 06 → *pa*[??] is the abbreviation of a the Ugaritic dry measure *prs*/*ś* /parīṯsi/, see above the discussion of 55-70-••-06-96-37b → *ma*[??]*-ki*[??]*-••-pa*[??]*-ri*[?]*-zi*[??].

5.4.2.5 Results

The results of the foregoing survey can now be recapitulated in a new transliteration of RASH Atab 004 (Table 5.12), using the confirmed values and the new tentative ones, along with a provisional translation that helps convey the solutions suggested (Table 5.13).

Table 5.12: Transliteration of RASH Atab 004 after testing the hypothetical sign values.

A.01	*a*[?]*-ka*[??]*-la*[?] | *pi*[??]*-lu*[?] | *ma*[??]*-li*[?] ¶
A.02	*a*[?]*-ti*[?]*-pi*[??]*-lu*[?] | *a*[?]*-wi*[??]*-sa*[??]*-pi*[??] | ¶
A.03	*i*[?]*-ka*[??]*-pa*[??]*-li*[?] | ¶
A.04	*a*[?]*-ne*[??]*-ni* | *ma*[??]*-ka*[??]*-pi*[??]*-ji*[??]¶
A.05	*a*[?]*-ta*[??]*-ta*[??]*-ri*[?] | *pi*[??]*-lu*[?] | *ta*[??]*-ja*[??]*-ni*[?] ¶
A.06	*i*[?]*-ja*[??]*-pa*[??]*-ti* | *pi*[??]*-lu*[?] | *e*[?]*-*105-*ti*/*a*[?]*-ka*[??] ¶
A.07	*pi*[??]*-lu*[?] | *e*[?]*-wi*$_2$[??]*-ni*[?] | ¶
A.08	*a*[?]*-wi*$_2$[??]*-sa*[??]*-pi*[??] | *pi*[??]*-lu*[?] | *ka*[??]*-pi*[??]*-li*[?] ¶
A.09	*zi*[??]*-ta*[?]*-ni*[?] ¶ | *i*[?]*-li*[?]*-ja*[??]*-ni*[?] | *zi*[??]*-ja*[??]*-ni*[?]*-ji*[??] ¶
A.10	*ta*[??]*-na*[??]*-ni* [??] | *pi*[??]*-lu*[?] | *i*[?]*-li*[?]*-ta*[??]*-ma*[?]*-ri*[?] ¶
A.11	*a*[?]*-ne*[??]*-ja*[??]*-ni*[??] | *pi*[??]*-lu*[?] | *92-*lu*[?]*-wa*[?]*-ni*[?] ¶
B.12	*u*[?]*-la*[?]*-mo*[??]*-ri*[?] | [[••]]*ka-pa-ni-ji*[??] ¶
B.13	*ko*[??]*-sa*[??]*-ra*[?]*-pi*[??] ¶
B.14	*i*[?]*-li*[?]*-ma*[??]*-li*[?]*-ki*[??] | *pi*[??]*-lu*[?] | *u*[?]*-mi*[??]*-mo*[??]*-ti*[?] ¶
B.15	*a*[?]*-ka*[??]*-la*[?]*-pi*[??] | *pi*[??]*-lu*[?] | *ma*[??]*-ki*[??] ¶
B.16	*e*[?]*-we*$_2$[??]*-ta*[??]*-sa*[??]*-li*[?] | *a*[?]*-ra*[?]*-pi*[??]*-ma*[??]*-sa*[??]*-ko*[??]*-li*[?] ¶
B.17	*a*[?]*-wi*[??]*-ra*[?]*-pi*[??] | *si*[?]*-ja*[?] | *ma*[??]*-ki*[??]*-••-pa*[??]*-ri*[?]*-zi*[??] ¶
B.18	*mo*[??]*-*92-*ni*[?] | *pi*[??]*-lu*[?] | *ma*[??]*-ki*[??] ¶
B.19	*sa*[??]*-lu*[??]/58-*ma*[??]*-li*[?]*-ki*[??] | *92-*pe*[??]*-ri*[?] | *pa*[??] ¶ or *92 ⌊ *ri*[?] | *pa*[??] ¶

Table 5.13: Provisional translation of RASH Atab 004.

A.01	(To) *A.*, son of Malu/i$^{(?)}$ ¶
A.02	(To) *A.* (son of$^{?}$) Abīršap
A.03	(To) I(..)-Baʿlu$^{(?)}$ ¶
A.04	(To) Aneni from Maʿqabu ¶
A.05	(To) *A.*, son of Tayānu ¶
A.06	(To) Yapatu$^{(??)}$, son of *E.* ¶
A.07	(To the) Son of Eve(n)ni$^{(?)}$ ¶
A.08	(To) *A.*, son of Karbili ¶
A.09	(To) Zidanni ¶ (To) Iliyānu from Siyannu ¶
A.10	(To) Danānu, son of ʾIlīθtamar ¶
A.11	(To) Aneyānu$^{(??)}$, son of Zi$^{(??)}$luwanu ¶
B.12	(To) ʾUlamurru$^{(?)}$ from Gap(a)nu$^{(?)}$ ¶
B.13	(To) Kōθarʾabu ¶
B.14	(To) ʾIlīmalik, son of ʿUmmīmōtu ¶
B.15	(To) *A.*, son of (the) king/son of Makku$^{(?)}$ ¶
B.16	(To) Ew<ri>tazal$^{(??)}$, *a.* ¶
B.17	(To) ʾAbīrašp, *s. m*… ¶
B.18	(To) *M.*, son of (the) king/son of Makku$^{(?)}$ ¶
B.19	(To) Sa(..)malik, *92., PA(*rīsu*-measure$^{??}$) or *92 ⌊ *r.* ⌋ PA(*rīsu*-measure$^{??}$) ¶

Not all of the results have the same significance, as some are more substantiated than others. There is a group of eight readings that stands out as very solid because they fulfil three crucial requirements: they are *long* sequences (four or more signs); they are *coherent* in terms of orthographic and phonological rules; they correspond to *material directly attested* in Syria, often at Ugarit itself; and they contain syllabograms that *repeat* in at least one other sequence in the same group. These three features reduce significantly the element of chance. In other words, it is not likely that the application of completely different values at random to the tablet would yield the same amount of identifications. The sequences that make up this group are: *a*$^{?}$*-wi*$^{??}$*-ra*$^{?}$*-pi*$^{??}$, *a*$^{?}$*-wi*$^{??}$*-sa*$^{??}$*-pi*$^{??}$, *i*$^{?}$*-li*$^{?}$*-ja*$^{??}$*-ni*$^{??}$, *i*$^{?}$*-li*$^{?}$*-ma*$^{??}$*-li*$^{?}$*-ki*$^{??}$, *i*$^{?}$*-li*$^{?}$*-ta*$^{??}$*-ma*$^{??}$*-ri*$^{?}$, *ko*$^{??}$*-sa*$^{??}$*-ra*$^{?}$*-pi*$^{?}$, *ma*$^{??}$*-ka*$^{??}$*-pi*$^{??}$*-ji*$^{??}$ and *zi*$^{??}$*-ja*$^{??}$*-ni*$^{?}$*-ji*$^{??}$. Three other sign-groups fail to meet one of the mentioned criteria. The identification of *u*$^{?}$*-mi*$^{??}$*-mo*$^{??}$*-ti*$^{?}$ is impeccable, but none of the other sequences above repeat any of its syllabograms. The reading *e*$^{?}$*-we*$_2$$^{??}$*-ta*$^{??}$*-sa*$^{??}$*-li*$^{?}$ entails

one substantial difficulty, namely that $e^{?}$-$we_2^{??}$- is not the spelling expected for /Evri-/. Finally, although $pi^{??}$-$lu^{??}$ | $ma^{??}$-$ki^{??}$ is rather straightforward, I separate it because the motivation for the appellative /binu malki/ "son of (the) king" in this context is unclear, because it actually comprises two disyllabic sequences and because we need to assume that CM $lu^{??}$ could represent Semitic /nu/. These eleven readings are shown in Table 5.14.

Table 5.14: Viable onomastic identifications in sequences with four or more signs from RASH Atab 004 (syllables repeated more than once are in bold type; the last three rows show the more problematic identifications).

Line	Sequence	Transliteration	Phonetic realization	Cuneiform spelling (alph. and syll.)
A.02	102-74-82-51	***a***$^{?}$-***wi***$^{??}$-***sa***$^{??}$-***pi***$^{??}$	/ʔAbīʳšap/	*abršp* Cf. *ʕbdršp* = ÌR-*ir-šap* Emar: *A-bi-ir-ša*$_{10}$-*ap-*
A.04	55-25-51-40	***ma***$^{??}$-*ka*$^{??}$-***pi***$^{??}$-***ji***$^{??}$	/Maʿqabīji/	*mʕqby* Cf. ^{URU}*ma-*(*ʾa-*)*qa*/*qá-b*V
A.09	104-09-71-100	***i***$^{?}$-***li***$^{?}$-***ja***$^{??}$-***ni***$^{??}$	/ʔIlījāni/	*ilyn* ~ DINGIR-*ia-nu*
A.09	37b-71-100-40	*zi*$^{??}$-***ja***$^{??}$-***ni***$^{?}$-***ji***$^{??}$	/ʦijānnīji/	*syny* Cf. ^{URU}*sí-ia*(*-an*)*-ni*/*na*$^{(ki)}$
A.10	104-09-04-55-96	***i***$^{?}$-***li***$^{?}$-***ta***$^{??}$-***ma***$^{??}$-*ri*$^{?}$	/ʔIlīᶿtamar/	*il*$\underline{t}$*tmr*
B.13	21-82-75-51	*ko*$^{??}$-***sa***$^{??}$-***ra***$^{?}$-***pi***$^{?}$	/Kōθarʾabī/	*k*$\underline{t}$*r-* + *-ab* ~ ^{m}*ku-šar-a-bi*
B.14	104-09-55-09-70	***i***$^{?}$-***li***$^{?}$-***ma***$^{??}$-***li***$^{?}$-***ki***$^{??}$	/ʔIlīmalik/	*ilmlk* Alalaḫ: DINGIR-*ma-lik*
B.17	102-74-75-51	***a***$^{?}$-***wi***$^{??}$-***ra***$^{?}$-***pi***$^{??}$	/ʔAbīraˢ̌p/	*abršp* Cf. *ʕbdršp* = ÌR-*ra-ši-ip* Emar: *A-bi-ra-šap*
			/ʔAbīrapʔi/	*abrpu* Alalaḫ: *A-bi-ra-a-bi* Hazor: *A-bi-ra-pí*
B.14	19-91-73-23	*u*$^{?}$-*mi*$^{??}$-*mo*$^{??}$-*ti*$^{?}$	/ʔUmmimōti/	*ummt*
B.15, 18	51-28 | 55-70	***pi***$^{??}$-*lu*$^{??}$	***ma***$^{??}$-***ki***$^{??}$	/binu malki/	*bn mlk* ~ *ma-al-ku* 'king'
B.16	38-01-04-82-09	*e*$^{?}$-*we*$_2^{??}$-***ta***$^{??}$-***sa***$^{??}$-***li***$^{?}$	/Evritazal/	*iwrt*$\underline{d}$*l* ~ EN-*ta-šal*

A second group with five onomastic identifications in sequences of three syllabograms is considered separately (Table 5.15). Although in two cases the correspondences are drawn exclusively from evidence from outside Ugarit (Emar and Nuzi), they are convincing. However, the size of these sequences increases the risk that they are accidental, so they are not compelling on their own, but rather when considered together with the first group. This means they cannot be used to validate the values of the signs they employ. For example: apart from 55-25-51-40 → $ma^{??}$-$ka^{??}$-$pi^{??}$-$ji^{??}$, the

only other sequence of RASH Atab 004 within these sets of identifications that repeats sign CM 25 → *ka* is 25-51-09 → *ka*[??]-*pi*[??]-*li*[?]. Because the correspondence of 25-51-09 → *ka*[??]-*pi*[??]-*li*[?] with the personal name *Karbili* from Emar could be coincidental, it cannot be taken as definitive proof that the phonetic value *ka* is correct for CM 25.

Table 5.15: Viable onomastic identifications in sequences with three signs from RASH Atab 004 (syllables repeated more than once are in bold type).

Line	Sequence	Transliteration	Phonetic realization	Cuneiform spelling (alph. and syll.)
A.04	**102**-02-**100**	***a***[?]-*ne*[??]-***ni***[??]	/Aneni/	*ann* Emar: *a-ni-ni*
A.05	**04-71-100**	***ta***[??]-***ja***[??]-***ni***[??]	/Tajāni/	Nuzi: *Tayanu*
A.08	25-**51-09**	*ka*[??]-***pi***[??]-***li***[?]	/Kaʳbili/	Cf. *krb* = Emar *Karbu* Emar: *Karbili*
A.09	**37b-71-100**	*zi*[??]-***ta***[??]-***ni***[??]	/tsidanni/	*śdn* Amarna: *Zi-ta-na* Hattusa: *Zidanni* Emar: *Zi-da-an-na*
A.10	**04**-08-**100**	***ta***[??]-*na*[??]-***ni***[??]	/Danāni/	*dnn* ~ *da-na-nu*

The readings of the first group support the hypothetical values of seventeen sign values: CM 04 → *ta*, 09 → *li*, 21 → *ko*, 25 → *ka*, 37b → *zi*, 40 → *ji*, 51 → *pi*, 55 → *ma*, 70 → *ki*, 71 → *ja*, 74 → *wi*, 75 → *ra*, 82 → *sa*, 96 → *ri*, 100 → *ni*, 102 → *a* and 104 → *i*. Of these, eleven are signs repeated in more than one sequence, and hence can be considered validated: CM 09 → *li*, 40 → *ji*, 51 → *pi*, 55 → *ma*, 71 → *ja*, 74 → *wi*, 75 → *ra*, 82 → *sa*, 100 → *ni*, 102 → *a* and 104 → *i*.

As a particular remark, I would like to point out that the interpretation of CM 40 (𐄁) as *ji*[??] has one additional advantage: it can explain why the sign is confined to Ugarit. As we have seen, the syllable /ji/ was productive in the Ugaritic language, namely in the genitive forms of the adjectives in /-īju/, but it may have been less so in the language(s) of Cypro-Minoan in Cyprus, depending on the status of /j/ in the latter. In fact, this is the case in Mycenaean Greek, where for phonotactic reasons and owing to historical developments in the language, the syllable /ji/ was not prolific in native words. This is a fundamental fact: if CM 40 is the cognate of the untransliterated LA 47 (𐄂) and LB 47 (𐀘, 𐀙), as argued in 3.4.10, a value *ji* might explain why the sign is so rare in the Mycenaean script and why it has eluded decipherment until now. Possibly, LB 47 was borrowed into Linear B to represent primarily words of non-Greek (Minoan?) where the syllable /ji/ occurred. Curiously, Doria posited the value i_2 or *ji* for the sign in 1972,[1069] on the grounds that the sign is almost always attested in word-

[1069] Doria (1972) apud Melena (2000: 22).

initial position.[1070] Of course, this is still insufficient evidence to sustain the value on the Aegean side: my point is simply that if the value of CM 40 is *ji*, then it is less surprising that the sign is restricted to the documents from Ugarit and that its Aegean cognates remains undeciphered. On the other hand, we could try to see whether the other incidences of the sign outside RASH Atab 004 point to Semitic adjectives as well. The three extra examples of CM 40 are found in the tablet RASH Atab 001, but, unfortunately, two of them are in severely broken contexts (lines B.02 and 03; see Appendix A) and one is a three-sign sequence, 25-44-40 → *ka*[??]*-se*[??]*-ji*[??] (B.06). This is admittedly not very helpful.[1071]

A similar account is possible for CM 37b/41 → *zi*[??] (,). If the sign is cognate with LA 49 (,) > LB 49 () as suggested in 3.4.6, then it is certainly less surprising that the sign is rare in Linear B and still escapes decipherment. As can be gathered from section 3.2.3.2.2, due to historical developments in the phonology of Greek, the syllables /ʦi/ and /ʣi/ would not have been productive in early Greek, but rather confined to loanwords.[1072] As a consequence, LB 49 → *zi*[??] might also have been borrowed from Linear A to transcribe mainly words of non-Greek origin, explaining why Mycenologists have not been able to establish its value.

Some general remarks to the results of the above interpretative analysis are also in place. It has been possible to arrive at compelling identifications with the hypothetical values suggested by Chapters 3 and 4, and a few more from combinatorial approaches, while at the same time maintaining substantial regularity in the orthographic and phonological interpretations—one of the crucial methodological rules established in the Introduction. RASH Atab 004 seems to meet the expectations of several scholars of containing a list of names familiar to the milieu of Ugarit and known to us from the cuneiform sources. In addition, the results supplied here are not tremendously different from those that Nahm published tersely in 1981 (and from some of the readings by Saporetti), even though the analyses performed have been methodologically different and far more extensive. This is a promising sign as regards the soundness of the results.

At first glance, it might seem suspicious to think a Cypro-Minoan text written in Ugaritic, a language that has strong ties to the cuneiform alphabetical script developed for it, but it is no less true that it sporadically makes appearances in the Mesopotamian logo-syllabary. I would stress the probability of the interpretation of 51-28 → *pi*[??]*-lu*[??]

[1070] It is also worthwhile noticing that there are seven instances of sign 47 as a phonogram in Linear A, two sequence-initially and three after (C)*i*: *de*-*su*-[•]-*47-*te* (ARKH 4 a.3-4); *i*-*47*[(ARKH b.3); *qa*-*mi*-*47-na-ra* (KN Zf 31); *47-*ku-na* (ZA 15 a.1); *47-nu-ra-ja* (HT 115 a.1);]*pa*$_3$*-si*-*47 (MIL Zb 1);]*304+*pa-da*-*47-*ku*[(HT 127a.3).

[1071] Cf. however, in the Ugaritic documentation the personal name *ksy*, of uncertain etymology (DULAT: 467).

[1072] To illustrate this distribution, it can be observed that the dictionary of Liddell and Scott contains only twelve alphabetic Greek words beginning with ζι-, which are either loanwords (e.g. ζιγγίβερις 'Arabic spice-plant', from a foreign word akin to Pāli *siṅgivera-*; Beekes 2010: 501) or dialectal developments (e.g. ζίκαιος, Elean for δίκαιος, with fronting of /d/ before /i/).

as /binu/ ‘son’. It works both from the perspective of the reading, well supported by comparative evidence (especially as far as the relation of CM 50/51 to LA *pi* and CGk *pi* is concerned), but also in internal terms, since of all the main languages used at Ugarit, the Semitic ones fit best the structure of text even before any transliteration is attempted. Normally, a list of personal names need not be perceived or assigned to any given language. The fact that we read a texts with names bearing patronymic constructions typical of the language they represent, Ugaritic in our case, does not automatically mean that the text is written in that language. To illustrate this point: it is quite possible for us to find in the middle of a newspaper piece written in English but list of persons’ with foreign names, such as “Muhammad ibn Arabi” and “Ali ibn Sina”.

However, it happens to be the case that in RASH Atab 004 the readings *do* suggest the text to be written in a Semitic language. This is clear from the pervasiveness of sequences ending in signs with C*i*[??] values in the first members of the entries that belong in the types SEQUENCE + 51-28 + SEQUENCE and SEQUENCE + SEQUENCE. Such signs suggest that all names are in the Ugaritic genitive case, not just those that are part of the patronymic constructions (which by definition require the genitive). Thus, we have *ta*[??]-*na*[??]-*ni*[??] | *pi*[??]-*lu*[?] | *i*[?]-*li*[?]-*ta*[??]-*ma*[?]-*ri*[?] ‘To Danānu, son of ʔIlīθtamar’, with the genitive /Danāni/, not the nominative /Danānu/. Likewise, we find *i*[?]-*li*[?]-*ja*[??]-*ni*[?] | *zi*[??]-*ja*[??]-*ni*[?]-*ji*[??] ‘To Iliyānu (who is) from Siyannu’, with *i*[?]-*li*[?]-*ja*[??]-*ni*[?], not ***i*[?]-*li*[?]-*ja*[??]-*n/lu*[??].

Those who wish to remain skeptical about the use of Ugaritic in a Cypro-Minoan inscription may point out that the internal evidence is not definitive and that an unknown language from Cyprus may have had patronymic constructions fitting the patterns of RASH Atab 004, but then one would need to explain why the sequence 51-28 is so repeated in this Ugarit document while being thoroughly absent from Cyprus. Those who maintain the traditional classification of Cypro-Minoan might find the present proposals compelling: as mentioned in section 2.1, Olivier accepts (like É. Masson) the possibility that the script was used for Ugaritic or other local languages used in coastal Syria.[1073] However, unlike what has often been defended, this does not mean that Ugaritic must have been the usual language of Cypro-Minoan at Ugarit, or that the inscriptions found there represent a whole new writing system. We need to keep in mind the background discussed in 5.4.2.1. RASH Atab 004 was found in one of the most significant non-palatial archives of Ugarit, one containing texts written in multiple languages, including state correspondence with numerous neighboring polities, including Cyprus. Other documents point to prolific scribal activity. If one of the owners or users of the building (be it Rap’ānu, [d]UTU-LUGAL/*Šapšu-malik* or some other character) was a prominent scribe involved in international affairs, RASH Atab 004 could be the product of a private interest in learning and exercising a foreign script.

[1073] Olivier (2013: 11).

Table 5.16: Grid with sign values supported by the analysis of RASH Atab 004.

	A	E	I	O	U
	 102[?]		 104[?]		 19/79[?]
J	 71[??]		 40[??]		
K	 25[??]		 70[??]	 21[??]	
L			 09[??]		 28[??]
M	 55[??]		 91[??]	 73[??]	
N	 08[??]		 100[??]		
P			 51[??]		
R	 75[??]		 96[??]		
S	 82[??]				
T	 04[??]		 23[??]		
W	 95[??]		 74 [??]		
W_2					
Z			 37b/41[??]		
Z_2					

5.5 CYPRO-MINOAN -23 AND ETEOCYPRIOT -*O*-*TI*: A POTENTIAL ISOGLOSS

One of the few well-established linguistic features of Eteocypriot is the occurrence, in its no more than twenty-five inscriptions, of an ending sequence *-o-ti*.[1074] It is seen in pairs like *ke-ra-ke-re-tu-lo-se* (*ICS* 196)/ *ke-ra-ka-re-tu-lo-ti* (*ICS* 195) 'well-born; noble(?)', *o-na-sa-ko-ra-ni* / *o-na-sa-ko-ra-no-ti* (*ICS* 195) and *pu-ru-wa-no* / *pu-ru-wa-no-ti* (*ICS* 195). The last two reflect Greek personal names, /Onasagoras/ and /Purwa/, respectively.[1075] I would also mention *a-na* | *ta-si* (*ICS* 193) and *a-na* | *ta-i* vs. *a-no-ti* | *ta-so-ti* (*ICS* 194). That personal names (nouns) and an adjective take this ending suggests that *-o-ti* is a case marker, but its actual function has been hard to determine given the uncertainty of the semantics of the words that co-occur with it.

In her seminal study of the Cypro-Minoan clay balls, É. Masson notices that certain sign-sequences inscribed on these objects appeared on other types of inscription in the CM 1 subcorpus with the addition of sign CM 23 (𒄿) → *ti*[?] in final position, which thus seems to behave as an "important suffix". As CM 23 has long been compared with LB *ti* (𐀆) and CGk *ti* (𐠈), she wonders whether this Cypro-Minoan feature might have something in common with the proliferation of sequence-final *-ti* in the corpus of Eteocypriot inscriptions.[1076] More recently, Duhoux has compared the two features, Cypro-Minoan sequence-final -23 → *ti*[?] and Eteocypriot *-ti*, which is actually a part of the well-established ending *-o-ti*, and concludes they probably constitute an "isogloss".[1077] He also reaches the conclusion "that CM 1 *-ti?* very probably corresponds to a genitive singular-like function".[1078] He bases this opinion mainly on the fact that CM 1 sequences ending in -23 = *-ti*[?] often are the only text on the objects where they appear, which suggests they represent the name of the object's owner in a possessive form, as e.g. 27-08-110-97-23 → *si*[?]*-na*[??]*-ke*/*u*[??]*-ro*[?]*-ti*[?] in the cylinder seal KOUR Psce 001.

The possibility that Cypro-Minoan final -23 → *ti*[?] represents, at least some of the time, an ending cognate with Eteocypriot *-o-ti* has implications that are far from negligible. If the Eteocypriot ending did not diverge much from the Cypro-Minoan one in terms of phonological shape, then in Cypro-Minoan final CM 23 should be preceded by syllabograms whose phonetic value is (C)*o* or similar. This hypothesis can be put to test by applying the hypothetical values to Cypro-Minoan sing-groups that end in -23 → *ti*[?]. Again, to avoid accidental identifications, this test will be performed only on those sequences composed of four or more syllabograms. The exercise produces impressive results, as shown in Tables 5.17-5.19.

[1074] Most recently, Steele (2013: 135).
[1075] Steele (2013: 135).
[1076] É. Masson (1971a: 25-26).
[1077] Duhoux (2009b: 65).
[1078] Duhoux (2009b: 69).

Table 5.17: Possible sequences ending in *-o-ti* in CM 1.

Transnumeration	**Hypothetical transliteration**	**Inscription**
27-13-110-97-23	*si*[?]*-na*[??]*-ke/u*[??]*-ro*[?]*-ti*[??]	ENKO Arou 001.04-05; KOUR Psce 001
27-69-09-88-23	*si*[?]*-ja*[?]*-li*[?]*-jo*[?]*-ti*[?]	CYPR Mvas 003
38-46-23 | 44-27-97-23	*e*[?]*-s/tu*[??]*-ti*[?] | *se*[??]*-si*[?]*-ro*[?]*-ti*[?]	MARO Avas 001
38-87-87-04-09-69-23	*e*[?]*-la*[?]*-la*[?]*-ta*[?]*-li*[?]*-ja*[??]*-ti*[?]	ATHI Avas 001
38-87-103-23-69-23	*e*[?]*-la*[??]*-*103*-ti*[?]*-ja*[??]*-ti*[??]	ENKO Arou 001.01
53-09-70-12-23	*ma*[??]*-li*[?]*-ki*[??]*-po*[?]*-ti*[?]	ENKO Arou 001.03
82-06-82-88-23	*sa*[??]*-pa*[??]*-sa*[??]*-jo*[?]*-ti*[?]	PPAP Mvas 001
82-96-88-23	*sa*[??]*-ri*[?]*-jo*[?]*-ti*[?]	ENKO Arou 001.02, 09, 26
92-13-15-23	*92*-to*[??]*-ko*[??]*-ti*[?]	CYPR Mvas 004
102-73-04-97-23	*a*[?]*-mo*[??]*-ta*[??]*-ro*[?]*-ti*[?]	KITI Ipla 001
(102-)82-85-88-97-23	(*a*[??]*-*)*sa*[??]*-ri*[?]*-jo*[?]*-ro*[?]*-ti*[?]	ENKO Avas 005
102-109-04-13-23	*a*[?]*-*109*-ta*[?]*-to*[??]*-ti*[?]	CYPR Mvas 002; ENKO Mvas 002
104-11-24-06-12-23	*i*[?]*-pe*[??]*-le*[?]*-pa*[??]*-po*[?]*-ti*[?]	ENKO Arou 001.06
107-11-24-107-27-69-23	*za*$_2$[??]*-pe*[??]*-le*[?]*-za*$_2$[??]*-si*[?]*-ja*[?]*-ti*[?]	ENKO Arou 001.11-12
]06-23-13-23	]*pa*[??]*-ti*[?]*-to*[?]*-ti*[?]	ENKO Avas 004
]27-73-64-23	*si*[?]*-mo*[??]*-o*[?]*-ti*[?][1079]	ENKO Avas 003

Thus, 20 out of 27 sequences in the three tables, excluding the repetitions in ENKO Arou 001 (i.e. 74%), have tentative values with C*o*. Only seven do not, while in three cases the value of the sign that precedes -23 → *-ti*[?] is uncertain. It can hardly be a coincidence that in more than two-thirds of the sample final -23 = *-ti*[?] is preceded by likely C*o* syllabograms.

Table 5.18: Possible sequences ending in *-o-ti* in CM 2.

Transnumeration	**Hypothetical transliteration**	**Inscription**
21-09-69-23	*ti*[?]*-li*[?]*-ja*[?]*-ti*[?]	ENKO Atab 003.B.19
30-70-17-23	*30-ki*[??]*-no*[??]*-ti*[?]	ENKO Atab 004.B.08
110-37-21-17-23	*ke/u*[??]*-*37*-ko*[??]*-no*[?]*-ti*[?]	ENKO Atab 002.B.I.25
••-75-62-60-23	••*-ra*[??]*-*62*-*60*-ti*[?]	ENKO Atab 002.A.I.26

[1079] Perhaps]27-85/114-64-23 → *si*[??]*-ri*[??]*-o*[?]*-ti*[?] (see Appendix A for the doubtful sign).

Table 5.19: Possible sequences ending in *-o-ti* in CM 3.

Transnumeration	**Hypothetical transliteration**	**Inscription**
19-91-73-23	*u*[?]*-mi*[??]*-mo*[??]*-ti*[?]	RASH Atab 004.B.14
44-02-98-23	*se*[??]*-we*[??]*-*98-ti*[?]	RASH Atab 001.A.01-02
71-50-05-56/23	*ja*[??]*-pi*[?]*-lo*[??]*-ne*[??]*/ti*[?]	SYRI Psce 001
104-71-06-23	*i*[?]*-ja*[??]*-pa*[??]*-ti*[?]	RASH Atab 004.A.06
102-37-06-05-23	*a*[?]*-*37-pa*[??]*-lo*[??]*-ti*[?]	RASH Atab 001.A.02-03

The material strongly indicates that a suffix *-o-ti* also existed in the language of Cypro-Minoan and that, probably, the same language was used in inscriptions of all subcorpora, even in CM 2. Of special relevance to this matter are two sequences attested in the side B of tablet ENKO Atab 004, possibly displaying inflection: 30-70-17-23 → **30-ki*[??]*-no*[??]*-ti*[?] (line B.08) and 30-70-65 → **30-ki*[??]*-ni*[??] (line B.19). On the other hand, notice that the reading 19-91-73-23 → *u*[?]*-mi*[??]*-mo*[??]*-ti*[?] in RASH Atab 004 should correspond to a genitive form of the Semitic personal name /ʕUmmīmōtu/, not to a Cypriot form with the ending *-o-ti*.

The inscriptions written in the Cypro-Greek syllabary from the hill of Marcello, northwest of the modern village of Kouklia (ancient Palaepaphos) are crucial for the interpretation of the function of *-oti* in the Eteocypriot language. The hill has been interpreted by archaeologists as an artificial formation used as an assault ramp in the Persian siege of Old Paphos, in the context of the Ionian revolt (498-497 BCE). It seems to have been erected with architectural material from one or more surrounding, *extramuros* buildings, probably cultic spaces, and yielded numerous inscribed stones which, despite their secondary deposition, have been dated roughly to ca. 600-498 BCE.[1080] The nature of the inscriptions is clearly dedicatory. The material that serves as support for them is quite varied in shape and quality of the work, depending on who commissioned the dedications (a number of them are from Paphian kings), ranging from well-cut stones coming from presumably complex structures to very coarse slabs. One type of medium that seems characteristic of Kouklia are the roughly cylindrical stones, which are unepigraphic or bear texts comprising two to several characters, and seem to consist of three main subtypes: cylinders or pillars, "drums" (flattened cylinders) and truncated cones. Their texts can also be divided in three main types: elaborated dedications, texts beginning with a nominative form and "possessive" inscriptions with one name in the genitive case.[1081] It is this last type that concerns us here. As already mentioned in 5.2, amongst the texts that escape any Greek interpretation, there are two that have gained consensus as genuine examples of Eteocypriot. They are *Kouklia* 224, a stone drum containing the sequence *ta-na-si-o-ti*, and 225, a coarse stone that reads

[1080] O. Masson and Mitford (1986: 7).
[1081] O. Masson and Mitford (1986: 8-10).

sa-ma-lo-ti. Evidently, the final *-o-ti*, well known from Amathus, is the relevant piece of evidence. Since these Eteocypriot texts appear in stones typologically identical to the ones bearing Greek inscriptions, which are the majority, even if the stones do not come from a single building it seems warranted to assume their function was identical. Indeed, we observe that, with one exception (*Kouklia* 11), whenever the Greek text in both drums and coarser/damaged stones with solitary sequences is understandable, the prevalent type of text is the single personal name in the genitive (Tables 5.20-5.21). This emerges as the most interpretation for Eteocypriot *ta-na-si-o-ti* and *sa-ma-lo-ti* as well.

Table 5.20: Kouklia drums with understandable single-word inscriptions in Greek.[1082]

No.	Transliteration	Realization	Interpretation
11	[*pa*]-*si-pi-lo-se*	/[Pa$^{?}$]siphilos/	'Pasiphilos (nominative)'(?)
18	*a-ke-la-wo*	/Ageláwō/	'Of Agelawos'
22	*e-u-ti-mo*	/Eutimō/	'Of Eutimos'
25	*ma-na-sa-ko-ra-u*	/Mnasagórau/	'Of Mnasagoras'
27	[*o*]-*na-si-wo*-[*se*]	/[O]násiwo[s]/	'Of Onasis'
34	*pa-ra-si-ta*-[*mo*]	/Pras(s)ida[mō$^{?}$]/	'Of Prassidamos'(?)
37	*ta-si-wa-na-to*	/Tas(s)iwánat(t)o(s)/	'Of Tassiwanaks(?)'

Table 5.21: Kouklia coarser/damaged stones with understandable single-word inscriptions in Greek.[1083]

No.	Transliteration	Realization	Interpretation
24	[*ku*]-*po-ro-te-mi-wo*	/Kuprothémiwo(s)/	'Of Kuprothemis'(?)
30	*o-na-si-pa-ta-u*	/Onasip^{h}á(n)tau/	'Of Onasiphantas'
39	*pa-wo-ta-u*	/P^{h}awótau/ or /P^{h}awó(n)dau/	'Of Phawotas/Phawondas$^{(?)}$,
40	*pi-le-ta-u*	/P^{h}ilḗtau/	'Of Philetas'

If Cypro-Minoan *-o$^{?}$-ti$^{?}$* and Eteocypriot *-o-ti* are cognate and analogous in function, then the genitive explanation can be considered for the 2nd millennium inscriptions as well. A possessive meaning has already been proposed tentatively by Duhoux[1084] and as a marker of ownership it fits well with the type of items and inscriptions of CM 1 with which *-o$^{?}$-ti$^{?}$* is associated: several ceramic containers and metallic bowls, a probably administrative clay cylinder (ENKO Arou 001), an ivory plaque that is likely votive (KITI Ipla 001) and a cylinder seal (KOUR Psce 001). The last three examples will be

[1082] According to O. Masson and Mitford (1986).
[1083] According to O. Masson and Mitford (1986).
[1084] Duhoux (2009b).

discussed in detail in the following section. The identification of *-o*[?]*-ti*[?] as a Cypro-Minoan/Eteocypriot isogloss validates the following sign readings:

CM 12 = *po*[?]
CM 13 = *to*[?]
CM 17 = *no*[?]
CM 15/21 = *ko*[?] (already supported by RASH Atab 004)
CM 88/*jo*[?] → *jo*
CM 97 = *ro*[?]

Two observations need to be made. First, CM 64 = *o*[?] has not been considered validated because its single appearance before final -23 → *-ti*[?] if after a dubious sign (see Table 5.17). Secondly, I have not removed a question mark from those signs for which their high frequency before final -23 had already been considered a factor of validation in section 4.2.2.2.4, without any other piece of internal evidence.

5.6 REPEATED CM 1 SEQUENCES

5.6.1 Premise

We have by now examined the one document from Ugarit with a significant amount of content likely to be recognizable from external sources, as well as a probable Cypro-Minoan-Eteocypriot isogloss. Apart from these two special cases, the inscriptions from Cyprus, or the few other records produced by Cypriots outside the island, are not expected to contain elements that can systematically be identified in other scripts geographically or chronologically close to Cypro-Minoan. The approach in this section is therefore different to a large extent. It deals with a group of sign-sequences of CM 1, many (not all) from the selected subcorpora of ENKO Arou 001 and ENKO Abou, i.e. the clay cylinder and the clay balls from Enkomi. They have been chosen because they repeat, occasionally on different types of objects or with different endings, probably reflecting morphological activity. The repetition of a given sign-group on objects of varied nature and function, and in multiple archaeological contexts, allows us to make some inferences about the meaning of the underlying words. The group of CM 1 repeated sequences I have selected is presented in Table 5.22. Specifically, it consists of the sign-groups from ENKO Arou 001 that repeat elsewhere and a number of sequences from the clay balls that repeat in other inscribed objects and in the balls themselves.

Table 5.22: Repeated CM 1 sequences according to object typology.

	Clay cylinder (ENKO Arou 001)	**Clay balls (Abou)**	**Cylinder Seals (Psce)**	**Pottery vessels (Avas)**	**Cultic Kition ivories (KITI Iins/Ipla)**
82-96-88		x			x
82-96-88-23	x				
(-)82-85-88-97-23				x	
27-08-110-97-23	x		x		
15-17-13		x			
41-28-21		x			
41-41-97	x	x		x	
64-05-24		x			
81-97		x			
102-09-82-85		x			
102-09-82-85-15		x			
102-73-04-97(-)		x		x	
102-73-04-97-23					x
102-87-107-97		x			
110-23-59		x			
110-23-59(-21-)23					x
110-73-85		x			
(-)110-73 | 96		x			

First, I examine the physical features and archaeological contexts of the inscribed objects. Because of the fragmentation and biases of the evidence, this exercise is largely interpretative and cannot lead to decisive establishing of the objects' function, so the result is more a narrowing down of possibilities than an actual establishing of an object's purpose. It is beyond this point that the procedures of this section coincide with the method used so far in this Chapter, because, subsequently, we can transliterate the selected sequences with the hypothetical values available and check the inferences on their meaning against the readings. At least in some cases, this approach might unveil elements known from elsewhere, specifically Cypriot place and personal names attested outside the island or the names of foreigners present in Cyprus.

5.6.2 The function of the media and the meaning of the inscriptions

> *In this respect* (…) *there seems to be a consistently perceived dual concern that involves writing with, on the one hand, some sort of authority statement, manifesting itself in the frequent (and at this stage still speculative) attestation of personal names or the possible recurrent marking of ownership, and, on the other hand, with a sporadic application of writing for administration purposes.*
>
> S. Ferrara[1085]

The following investigates the meaning of the selected sequences by looking at the likely functions of the objects they appear on. Because the focus is on the objects' physical properties and archaeological context, I avoid interpretations based on aprioristic perspectives of their context (i.e. what in themselves are interpretations of the archaeological reality) or on the contents of deciphered texts found on superficially similar objects from other ancient societies. Although it is not ignored, comparative evidence is taken into consideration only when the comparanda show physical characteristics and material associations analogous to those of objects inscribed with Cypro-Minoan. As shown in Table 5.12, the objects containing the selection of repeated sequences can be narrowed down to five groups: the clay cylinder from Enkomi (ENKO Arou 001); all the clay balls (Abou), including the ones from outside Enkomi; the cylinder seals (Psce); ceramic vessels (Avas); and two ivory objects, a pipe and a plaque, from a cultic context at Kition (Kition Iins/Ipla). In the background of this inquiry, stands the reality of the society or societies of Cyprus in the Late Bronze Age (1650-1050 BCE), which was characterized by profound social-economical transformations in the island. Extensive trade with the surrounding regions of the Eastern Mediterranean developed, the production and export of copper intensified and extended, major urban centers and large-scale architecture appeared island-wide, cylinder seals and writing were introduced from outside, and violence was institutionalized (as inferred by the large numbers of weapons in burials and the proliferation of warriors in the iconography of pottery).[1086] These developments were accompanied by a sharp social differentiation, well patent in the clear material distinctions in the burial practices.[1087] Regardless of the exact political configuration(s) of Cyprus throughout the 2nd millennium BCE, these distinctions are consistent with the emergence of elite groups that managed to take control of material resources and, thence, through coercion, of the remaining sectors of the Cypriot society. It can hardly be a coincidence that the technique of writing was introduced early in this historical stage, and it certainly played an important role in these social transformations.

[1085] *CMI* I: 148.
[1086] Webb (2002: 111) and Knapp (2008: 133), with references.
[1087] Keswani (1989: 68-69).

5.6.2.1 Clay cylinder ENKO Arou 001

The archaeological context of this object is imprecise. The excavators of the campaign of 1967 place it in a building at the Center-East part of Enkomi, in the *quartiers* Q2-5E. They date it roughly to the 14th century BCE (hence vaguely LC II) based on the materials in the same assemblage. Regarding stratigraphy, all that is specified is that that its stratum was preceded by a level that contained materials from the MC III and LC I periods and lay immediately above the bedrock.[1088] Yet it is also reported that the same building yielded half of a big inscribed clay ball with five readable signs. This description fits the characteristics of ENKO Abou 076, a ball broken in half, with a diameter of 4 cm.[1089] Since we know that ENKO Abou 076 comes from Room 13 of Q4E,[1090] this tells us which building the excavators refer to. However, beyond limited references to artefactual associations there is little information available to make judgements about the cylinder's archaeological context.

Thus, it is mostly the characteristics of the object that can inform us about its function. Five other clay cylinders bearing Cypro-Minoan inscriptions, or fragments thereof, were recovered at Kalavasos-*Ayios Dhimitrios* (KALA Arou 001-005) and present further examples of this type of object. They were found at different loci within the LC IIC (1320-1190 BCE) Building X, a large (ca. 1000 m^2) square construction of ashlar masonry that probably had two stories. Its western part included a pillared hall that functioned as a storage area, as demonstrated by the presence of approximately 50 large pithoi that were shown to contain olive oil. The scale of the architecture, on the other hand, motivates suggestions that Building X was the headquarters of the elite that controlled the entire settlement. Surrounding it were "domestic" complexes and other installations that included a "small-scale copper workshop".[1091] Unfortunately, the clay cylinders from *Ayios Dhimitrios* are very difficult to read, because their texts are often worn or broken and, according to Smith, in two cases their inscriptions may even be palimpsests or contain erasures.[1092] This is the reason that their contents are not studied in this chapter. In any case, two observations can be made. First, 104-24-91 is the beginning sequence KALA Arou 001, but almost certainly also of 003, 004 and 005, even though parts of it are damaged in each of these last there cylinders;[1093] in KALA Arou 001 it is even repeated further into the text, probably twice, in lines 13 and 18.[1094] Secondly, it seems beyond question that numerical notations are found in KALA Arou

[1088] Schaeffer *et al*. (1968: 266-269).
[1089] *HoChyMin*: 173; *CMI* II: 44-45.
[1090] *CMI* II: 44-45.
[1091] *CMI* I: 78-80, citing South (1982; 1984a; 1984b; 1996).
[1092] Smith (2002: 21).
[1093] É. Masson (1983: 139), apud *CMI* I: 81 has defended that all five cylinders begin the same way, but the initial sequence of KALA Arou 002 is too damaged (cf. *HoChyMin*: 154-155).
[1094] See the editions of these inscriptions in *HoChyMin*. Smith (2002: 21) maintains the opposite view.

004.04.[1095] The first of these observations indicates the use of formulaic language, whereas the second suggests accounting purposes, both being symptoms of bureaucracy. Smith has also proposed the use of the cylinders as administrative tools based on their use numbers as well as the evidence for palimpsests.

The few examples of other inscribed clay cylinders from contemporary societies are not too informative. The inscription on a cylinder from Beth Shean (Canaan) is a message sent by the ruler of a Canaanite town to his overload, but it is perforated and was likely carried as a pendant.[1096] One of the El-Amarna documents, EA 355, is also a clay cylinder, but its text is so cryptic (each of its eleven lines contains a series of repeated logo-syllabic cuneiform signs) that it has been proposed to be a scribal or school text of some sort.[1097] If anything, the second example suggests the possibility that non-perforated cylinders could be used for scribal practice. The structure of ENKO Arou 001 is not very indicative of a lexical list, so the administrative interpretation still seems the most promising. The possibility of a liturgical text, including a list of divine names (a genre well-attested in the cuneiform world), is not entirely impossible, but we would have to assume that the Enkomi cylinder had a function distinct from its *Ayios Dhimitrios* counterparts, which show numbers and possible palimpsests. It must be noticed that the absence of numerical notations in the Enkomi specimen should not be taken as a refutation of bureaucratic use. A case in point is Ugarit, where alphabetical accounting texts often spell out numbers using letters instead of numerical notation.[1098]

Further insights into the function of ENKO Arou 001 can be gained from examining the structure of its text. The inscription occupies the entire surface of the cylinder and is delimited by a horizontal line that separates the beginning from the end (see Figure 2.4). The text can be divided in three parts. The first is represented by line 01, which contains only one sign-sequence followed by a sort of *punkt* (•). The sequence is 38-87-103-23-69-23. As we have seen in 4.2.2.3.15, it shares its two first signs and the last two with 38-87-87-04-09-69-23, the single sign-group inscribed on a fragmentary clay pithos from Athienou (ATHI Avas 001).[1099] The *punkt* is similar to the one used in the CM 2 tablets, but clearly has a different function. Since it appears in the first line and only there, most likely the first sequence serves as a sort of heading and the *punkt* is there to introduce the remaining text. If we endorse the interpretation of 𒉿 as some sort of entry marker (see 2.2.1.2), the text in lines 02-13 emerges as a sort of list. 𒉿 is inserted after each sequence, in five cases after every two sequences, if it indicates units of meaning larger than, and encompassing, the regular sequence dividers (𒁹). Line 07 shows a divider after a sequence that is followed by a 𒉿, possibly a mistake of redundancy on the part of the scribe. From line 13 to the end of the inscription in line

[1095] *HoChyMin*: 161, 163. See also Smith (2002: 21).
[1096] Horowitz (1996). See also *CMI* I : 32, fn. 116.
[1097] Izre'el (1997: 41-42).
[1098] Bordreuil and Pardee (2009: 5, 35).
[1099] The pithos discovered out of its original context (*CMI* II: 57).

27, the structure of the text changes again. Sequence dividers become rarer and the entry markers even more so, meaning that long strings of signs are written in *scriptio continua*, even though they can hardly represent just one word: the largest of these strings has eighteen successive signs and occurs in lines 15-17. Table 5.23 includes tentative segmentations based on the occurrence of sequences already attested in lines 01-13 (e.g. 04-87-25) and repeated strings (e.g. -25-103-69-).

Some sign-groups are repeated throughout the text of ENKO Arou 001 and must have a significant link with its subject matter: 04-87-25 (ll. 10, 14-15, 17, 23) appears four times; (-)25-103-69(-) (ll.16-17, 25, 27), 82-75-99 (ll. 05, 25, 27) and 82-96-88-23 (ll. 02, 09, 26) occur thrice. Others, as we have seen, are attested elsewhere in inscribed objects of very different type: 27-08-110-97-23 (KOUR Psce 001) and 41-41-97 (IDAL Avas 001 and TIRY Abou 001). Particularly interesting are lines 02-05. They have four units or entries separated by /: 73-82 | 82-96-88-23 → *mo*[??]*-sa*[??] | *sa*[??]*-ri*[?]*-jo*[?]*-ti*[?], 104-07 → *i*[?]*-te*[??], 53-09-70-12-23 → *ma*[??]*-li*[??]*-ki*[?]*-po*[?]*-ti*[?]and 110-102-<u>53</u>-<u>04</u> | 27-08-110-97-23 → *ke*/*u*[??]*-a*[?]*-<u>ma</u>*[??]*-<u>ta</u>*[?] | *si*[??]*-na*[?]*-ke*/*u*[??]*-ro*[?]*-ti*[?]. Three of these include a sequence that ends with sign CM 23 → *ti*[?] and, if we consider our hypothetical values, specifically with *-o*[?]*-ti*[?]. If our grammatical interpretation of this ending is correct, these entries display the formulas ‘X of Y’ and ‘of Y’.

In fact, the most telling feature of the text is the behavior of lines 02-13 as a sort of list or enumeration, consistent with the bureaucratic genre. It goes without saying that lists of other kinds are possible, but in the light of the evidence of the clay cylinders of *Ayios Dhimitrios* the administrative interpretation seems the most likely in the case of Enkomi as well.

Table 5.23: Full transnumeration of ENKO Arou 001 according to the interpretation of "¶" as an entry marker.

	Transnumeration by possible entries
.01	38-87-103-23-69-23 ●
.02	73-82 | 82-96-88-23 ¶
.02-03	104-07 ¶
.03	53-09-70-12-23 ¶
.03-05	110-102-53-04 | 27-08-110-97-23 ¶
.05	19 ¶
.05-06	82-75-99 | 104-11-24-06-12-23 ¶
.06	06 ¶
.07	26-08 ¶ |
.07	06 ¶
.07-08	46-53-12-23 ¶
.08	82 ¶
.08	12-25 | 110 ¶
.09	82-96-88-23 ¶
.09-10	09-70-26-75 ¶
.10-11	04-87-25 | 41-41-97 ¶
.11	38-09-75-07-21 ¶
.11-12	38-21 ¶
.12-13	107-11-24-107-27-69-23 ¶
.13-15	04-09-88-08-07-21(-)44-26(-)19-73-25-23(-)04-87-25 |
.15-17	44-37-97(-)103-25-75-103-27-69(-)25-103-69(-)04-87-25(-)39-21-08 ⌊
.18-19	21-06-107-24-53-11(-)104-103-25-101-97-08 |
.19-20	35-21-97-23 ¶
.20	73-97 ¶
.20-21	19-23-69-07-21 ¶
.21-23	46-25-04-23(-)27-05(-)$^{(?)}$25-04-99-96/97-23(-)04-87-25 |
.23-24	44-88-97-23(-)25-04-99-07 |
.24-25	11-06-53-96(-)25-103-69(-)82-75-99 |
.25-27	07-05(-)82-96-88-23(-)69-26-50-69(-)25-103-69(-)82-75-99 |

5.6.2.2 The clay balls

Detailed descriptions and discussions of the archeological contexts of the clay balls have already been offered by Vetters and Ferrara[1100] and will not be repeated here. What is offered next is a short overview of those contexts and a discussion of the physical characteristics and epigraphic features of the objects and of a typological parallel from Ugarit.

As regards their material and spatial associations, most stratified balls occur in assemblages undoubtedly linked to some kind of industrial activity, be it metallurgical or something else, as betrayed by their co-occurrence with ovens, querns, slag, a variety of other tools. This is the case with different spaces in the sector Q1W (LC IIC and IIIA) at Enkomi[1101] and apparently with the post-palatial building at Tiryns where TIRY Abou 001 was found.[1102] Three other contexts can be interpreted as strictly "cultic" or "religious": the "House of the Columns" and the "Sanctuary of the Ingot God" at Enkomi and "Temple 5" at Kition. However, apart from a wide variety of high intrinsic value objects, the most prominent feature of the "Sanctuary of the Ingot God" was the presence in a small chamber of a statuette that seems to represent the deity (or the foremost of multiple deities?) worshipped in the building. The statuette was made of bronze and represented an anthropomorphic figure standing on an ox-hide ingot. These and other indications of ideological links between metallurgical production and institutionalized religion in Cyprus have been detailed in several works.[1103] The connection is seen even in the Cypriot cylinder seals of the so-called Common Style (see 5.6.2.3), which throughout the LC period display recurrent symbolic compositions featuring ingots and ox skulls side-by-side. It is possible, therefore, that the presence of five balls at the "Sanctuary" is somehow tied to the sphere of metalworking. This link, however, is hard to defend for the "House of the Columns" at Enkomi or "Temple 5" at Kition, which had no obvious evidence for activities relating to metalwork.

The manufacture of the balls was inexpensive, as clay seems to have been a fairly accessible raw material at Enkomi[1104] and each ball requires little of it: their diameter ranges between 1.3 and 3.1 cm, and the majority measures 2.0-2.2 mm. Information on the weight of the balls is exiguous, but where it exists it shows great discrepancies.[1105] The technical effort was minor: the spherical shape and smooth surface of the objects was probably obtained by rolling the clay between the palms of

[1100] Vetters (2011: 11-14); *CMI* I: 90-110.
[1101] *CMI* I: 91-97.
[1102] Vetters (2011: 21-22).
[1103] Catling (1964); Knapp (1986); Blakely (1998).
[1104] It has been shown through petrographic analyses that the clay of ENKO Atab 001-004 contains mineral components drawn originating in the channel of the neighboring Pediaios River (Goren *et al.* 2003: 237, 248).
[1105] Thus, five balls held in the British Museum have very disparate weights, between 3.92 and 23.28g (as reported by Ferrara in *CMI* I: 117), whereas TIRY Abou 001 weighs 5-5.1g (Vetters 2011: 15).

the hands[1106] and the short horizontal inscriptions by holding them at their poles during the process of writing.[1107] Many concentrations of ball occurred in spaces where ovens or hearths existed and could have been used to bake them.[1108] This would have made them relatively hard to break. The inscriptions consist of 2-8 signs, but the majority comprises only 4-5, excluding the dividers.[1109] The existence of at least ten different scribal hands producing balls at different parts of Enkomi can be surmised for the LC IIC-IIIA periods,[1110] suggesting the existence of a significant group of people dedicated to the task, which did not involve much specialization in itself but obviously required the ability of writing. The balls are the most significant type of inscribed object in the Cypro-Minoan corpus: there are 90 examples from Enkomi and five from other three settlements (see 1.2.3). Their high numbers corroborate their interpretation as low-cost and low-value products, with short to average duration and high disposability.

The most common types of inscription borne by the balls are SEQUENCE | SINGLE SIGN (36), SEQUENCE (25) and SEQUENCE | SEQUENCE (|) (13). For É. Masson, the basic function is exerted by the first sign-group, which is absent in only two cases (where the inscription begins with a single sign), whereas the subsequent single sign or second sequence would constitute a sort of optional "complement".[1111] I would call the attention to the case of 102-73-04-97-110-73 | 96 (ENKO Abou 021). On one hand, the first four characters of the sign-group, 102-73-04-97-, constitute an independent sequence in ENKO Abou 015 and 045 as well as ENKO Avas 002. On the other hand, the last two (-)110-73, if considered alongside the single sign after the divider, 96,[1112] compare well with the single sequence of ENKO Abou 037, 110-73-85 (for CM 85 as an allograph of 96, see 2.3.18). It is possible that this is a fortuitous similarity and that 102-73-04-97-110-73 is an inflected form of 102-73-04-97, but this would not square well with the tendency of the clay balls to use "basic" forms that appear with "suffixes" only elsewhere. It seems more likely that 102-73-04-97-110-73 | 96 is a scribal mistake for *102-73-04-97 | 110-73-96. If this is correct, then the sign-groups in second position are probably not very different from the first ones functionally, since 110-73-85 appears self-standing in another ball. It is also important to observe that in the most frequent type of inscription, SEQUENCE | SINGLE SIGN, the sign-groups can repeat in different balls, but are always followed by distinct single signs.

[1106] Vetters (2011: 15).
[1107] *CMI* I: 177-178
[1108] One may also wonder if the pits documented in some of the rooms of building where the balls of Enkomi were found possibly served for keeping the clay used in their manufacture soaked.
[1109] *CMI* I: 113.
[1110] *CMI* I: 181-187.
[1111] See É. Masson (1971a: 29)
[1112] According to *HoChyMin*: 75 the reading is doubtful, but the photograph provided ensures the reading (see Appendix A).

Table 5.24: Types of inscription seen in the clay balls.

Type of Sequence	Occurrences
SEQUENCE	23
SEQUENCE |	2
SEQUENCE | SINGLE SIGN	36
SEQUENCE | SEQUENCE	13
SEQUENCE | SEQUENCE |	1
SINGLE SIGN | SEQUENCE	1
SINGLE SIGN | SINGLE SIGN	1
Too damaged	13
Unepigraphic	2
Total	90

The balls have remarkably similar comparanda at Ugarit, where two inscribed clay balls inscribed in the local cuneiform alphabet were found (RS 24.132 and 29.109). The context of find is known for only one of them, RS 24.132, which in contrast with its Cypriot homologues comes from a funerary context.[1113] It bears a three-sign word, *šmn*, widely interpreted as 'oil',[1114] but there are at least four homophonous words in the Ugaritic language,[1115] including the personal name *šmn* = *Ša-mu-nu,* signaled by Ferrara.[1116] The very short text on unstratified RS 29.109 has been interpreted as double instance of the cuneiform Mesopotamian logogram GIŠ 'wood', but more likely contains the alphabetical inscription *pgn*. The latter is interesting because it is the name of the sender of the letter RS 18.147, addressed to the king of Ugarit. This epistle was once thought to have been sent from Alasiya/Cyprus, but is now associated with an official Pukana known from a Hittite seal from Tarsus.[1117] All in all, the most likely interpretation is that the Ugarit balls bore personal names.

Because of the very disparate weights of the Cypriot balls and the fact that each of them was subjected to variations in weight prompted by firing and humidity loss, both É. Masson and Ferrara dismissed them as weighing devices, which was the interpretation put forward early on by Persson.[1118] Dikaios suggested the balls were used as gaming marbles based on their appearance in room 26 in Enkomi's Quarter 1W. This room, measuring c. 3 x 3 m, had five pits arranged in a suspicious way: a large pit was situated near its center and one smaller pit in each of its four corners. According to

[1113] Tomb 3455 of Ugarit. See Vetters (2011: 12, fn. 99). Cf. also *CMI* I: 111.
[1114] É. Masson (1971a) and Dalix (2008) apud Justel (2010: 414), and Vetters (2011: 12, fn. 99).
[1115] *DULAT*: 827-829.
[1116] *CMI* I: 111.
[1117] Klengel (1974, 169; 1992: 149) apud Singer (1999: 718). Cf. also the syllabic spellings of a name *bu-ka-na* / *bu-qa-na* at Ugarit.
[1118] É. Masson (1971a: 27); *CMI* I: 117.

Dikaios, the participants in the game were supposed to prevent the balls from falling into the central pit. Ferrara is right in signaling as obstacles to this interpretation, at least in the exact scheme envisaged by Dikaios, the imperfect intersection of the external and central pits in the room and the absence of a similar layout in other spaces where balls were found. But is it impossible that they were used for different types of games unrelated to the pits, thus being of no consequence whether the exact scheme proposed by Dikaios is correct? Other proposals associated the balls with religion. For Evans, they were votive offerings to the gods[1119] and, for Rutkowski, divination pieces. Ferrara finds it difficult to accept this account by virtue of the balls appearance in "sanctuary" and "non-sanctuary" assemblages.[1120]

Consensus is growing around É. Masson's idea that the balls represent a sort of "attendance fees" or "identity tags", whereby their first sign-group is the name of its carrier and the second sequence or isolated sign a "complement" of some sort.[1121] She draws a parallel with clay tokens from the Arcadian city of Mantinea (5th-3rd centuries BCE). Found in and around the city's theater, these tokens are interpreted as the means to allocate seats in the public assemblies that met in the building.[1122] For Ferrara this is the most plausible interpretation offered because an identity token could be used in multiple situations. As the Cypriot balls "are characterized by a supra-contextual functionality", she argues, the information they convey needs not be specific to just one of the contexts where they appear and it is perhaps "in the very variable nature of the contexts that the pivotal clue" to their interpretation lies.[1123] Another parallel signalled by É. Masson were the tetrahedral bullas used in Mesopotamia in the age of Hammurabi as "attendance fees" for workers.[1124] This Ferrara opposes because it clashes with her idea that the sign-groups of the balls that repeat in portable objects of high intrinsic value, especially 82-96-88 (see below), correspond to the names of members of the ruling elite of Enkomi and can hardly have been subordinates. Yet despite the disagreements on some details, at present the views of different authors are converging on the idea that the balls carry anthroponyms.

At this point, I would like to call the attention to one of the bases for É. Masson's suggestion of a token-like function: "la raison d'être de ces petits objects semble avoir été de porter l'inscription". This observation is not necessarily valid: an object whose sole purpose is to carry an inscription would arguably do so more effectively if the writing surface were flat. This is the case with the Mantinea tokens. Furthermore, objects whose only function is to name something are *latu sensu* "labels"

[1119] Evans apud É. Masson (1971a: 27).
[1120] *CMI* I: 119 citing Rutkowski (1979: 226) and Dikaios (1969: 241). She compares the case—in her view problematic—of the *astragali* (talus bones), objects interpreted as ritual items when found in buildings of presumable ritual function, but as toys when retrieved in spaces presumably profane.
[1121] É. Masson (1971a: 29; 1973). See also Vetters 2011, *CMI* I: 120 and Steele 2014.
[1122] Each legible token has a name and patronymic in one side, and on the other side one letter of the Greek alphabet presumably marking seating rows. See the detailed discussion in Robinson (2011: 37-38).
[1123] *CMI* I: 120.
[1124] É. Masson (1971a: 29), with references.

or "tags", yet the Cypriot clay balls were hardly appropriate to be attached to other objects (as identifiers of contents, provenance and destination, or ownership) because they lack perforations for tying strings and hanging, or any other characteristic that might have allowed their coupling. Ferrara signals their portability,[1125] but if they were to be carried by people, why do they lack any attaching feature whose absence would have required them to be carried around in some sort of closed container and increased the chance of loss? It ensues from these observations that the simple round shape of the balls, which did not facilitate the process of inscribing and made them relatively more difficult to transport and easier to lose, must have been necessary for other reasons. By virtue of physics, round shapes are adequate for rolling or tossing. In addition, baking the balls made them harder and therefore more resisting to throwing in small distances or heights. If not game pieces, the attractive alternative is to interpret the balls as some sort of *sortes* or lots. The inscriptions imply a need for distinction, which might or might not have had ludic purposes. The Homeric poems are filled with references to episodes of sortation related to warfare, deciding order or place in competitive games, and the dividing of inheritance. The practice best described consisted in casting lots (*klēroi*) previously marked with a personal "sign" (*sēma*) into a bronze helmet, which was then shaken until one lot leapt out.[1126] The shape of the Homeric lots is not sung, but they were probably made *ad hoc*. The closest comparandum for the Cypriot balls in terms of physical features is a group of four bronze spheres from northern Sicily (6^{th}-5^{th} centuries BCE), each inscribed with a divine name or epithet. Despite the greater investment in terms of material, the Sicilian spheres are analogous to the Cypriot ones in certain aspects: they measure 2-2.2 cm and bear incised Greek letters whose height is 0.4-0.8 cm, and one of them is somewhat flattened at the poles. Unfortunately, the lack of clear archaeological contexts allows no more than hypothesizing their use as tools of sortation in the context of divination.[1127]

In conclusion, an interpretation of the clay balls as generic instruments of sortation, not necessarily unifunctional and possibly used in religious as well as mundane scopes, has the advantage of conciliating the basic pillars of É. Masson's and Ferrara's views of these objects as bearing personal names, while accounting for their shape and diversity of archaeological contexts. A cult-related use (not necessarily like the one propounded by Rutkowski) would be in harmony with the occurrence of a concentration of balls in the "Sanctuary of the Ingot God". Thus, the inscriptions on these objects most likely contain personal names, optionally followed by descriptives of people, but the occurrence of theonyms is not to be excluded.

[1125] *CMI* I: 117.
[1126] *Il.* (3.325, 7: 170-190, 23.352, 23.862 and 24.400) and *Od.* (9.331, 10: 205-210, 14.209).
[1127] Sclafani (2007: 251); Brugnone (2011). One of the spheres was found near the *temenos* of Athena, at the site of Himera. Based on the physical features of the objects, Sclafani rejects previous interpretations as votive dedications and advocates for tools of sortation in connection with activities of cleromancy.

5.6.2.3 Cylinder seals

Cylinder seals first appear in the mid-4th millennium BCE at the sites of Uruk (southern Mesopotamian) and Susa (southwestern Iran), but eventually become widespread in southwestern Asia and beyond.[1128] The earliest cylindrical seals on Cyprus were recovered from burials dating from around ca. 1600 BCE and are interpreted as Syrian and Mesopotamian imports "circulating well beyond their original area of use and date of engraving".[1129] For Webb, local cylinder carving begins not long after, with LC IB (1525-1425 BCE) examples associated with burials at sites in northwestern Cyprus. It is uncertain whether the early Cypriot specimens are products from local "workshops run by foreign artisans", among which there were re-cut imported cylinders, or strictly imports.[1130]

Taphonomic processes and biases of excavation complicate the investigation of these objects. The number of known cylinder seals from Cyprus was 661 in 1972, and nowadays is certainly higher. Fewer than 400 have a documented find-spot and, except for those from more recent excavations almost, most lack reliable contextual data. More than half of the cylinders with known provenance come from Enkomi, yet as with Cypro-Minoan inscriptions this number is in part due to the extensive excavations at the site.[1131] The inland site of Ayia Paraskevi (central-northern Cyprus) ranks second on the list. It seems that the twilight of the production and use of cylinder seals took place in the 12th century BCE.[1132] Cylinders also appear in later funerary contexts, as late as the CG I (1050-950 BCE), where they are interpreted as heirlooms — such is the case of the PPAP Psce 001, an inscribed seal from Palaepaphos-*Skales*.[1133]

Cylinders from Syro-Mesopotamia in the first half of the 2nd millennium BCE were used for sealing as a means of securing access to goods concealed behind doors or in containers.[1134] There is no indication that the sealing function was retained, at least primarily, at the time the first cylinders were introduced in Cyprus.[1135] The exiguous evidence for a sphragistic use on the island is well-known: there is a single example of a cylinder seal clay impression, from LC IIC-IIIA Enkomi.[1136] Other four sealings are known, but come from outside Cyprus, three of them being relatively late (13th century

[1128] Porada (1993).
[1129] In western Syria this type of object is first attested at Ebla as early as ca. 2250 BCE (Magness-Gardiner 1990: 62, with refs.).
[1130] Webb (2002: 113-114); Webb and Weingarten (2012: 87, fn. 25), citing Joyner *et al*. (2006).
[1131] Webb (2002: 114-115); Webb and Weingarten (2012: 87).
[1132] This is the period to which most of the examples from non-funerary contexts, presumably "lost or discarded", have been dated. Webb connects the demise of cylinders to the (re)introduction of the stamp seal on Cyprus toward the end of the 13th century BCE and related social transformations in the island at that time (Webb and Weingarten 2012: 87, 90-91).
[1133] Valério (2014b: 120) citing Porada (1983: 409) apud Karageorghis (1983a).
[1134] Magness-Gardiner (1990: 62-63); Porada (1993: 563). Starting around 1850 BCE in palatial contexts at Mari, we find that they are used to seal not just goods, but also cuneiform clay texts.
[1135] Webb (2002: 113); Webb and Weingarten (2012: 87).
[1136] Smith (1994: 167-173). A clay sealing discovered at Ayia Paraskevi in the 19th century is now missing.

BCE), and therefore are of little use in discussions on seal use in the island itself.[1137] Around 40 other sealings occur, mostly in the form of impressions on the upper part of storage jars, but these appear to have been made by wooden cylinders.[1138] As Webb argues, the absence of clay sealings after the undertaking of excavations that in some cases (such as Enkomi) were extensive and in others uncovered storage complexes destroyed by fire (such as Kalavasos-*Ayios Dhimitrios* and Maroni-*Vournes*) can hardly be accidental.[1139] Smith shows that seals in general are associated with multiple types of context, industrial, cultic and funerary, but this does not establish sphragistic function, only their mobile nature.[1140] We ignore whether writing was introduced to the island before or after cylinders were, but the vague dates currently available suggest writing came second. Among other circumstances difficult to retrieve, the absence in Cyprus of an administrative apparatus comparable to that of the Syrian states at the end of the 17th century BCE may be responsible for differences in use of the Cypriot cylinders.[1141]

Given the limitations of the contextual data, it is even more imperative to scrutinize the physical characteristics of the objects themselves. Cypriot cylinders have long been categorized by Porada into three stylistic types according to raw material, iconography, style and technical quality: Elaborate Style (ES), Derivative Style (DS) and Common Style (CS). The defining features of each style are summarized in Table 5.25.

Webb has argued that seals, cylindrical or otherwise, were instrumental within a wealth finance system. In such a system, elite groups would have monopolized the production and distribution of "low-bulk/high-value" goods carrying a symbolic language. With this mechanism, elites sustained their control of this stratified system by conferring privileges, or status, to a restricted number of individuals. This special status was sanctioned through the possession and display of these high-value items.[1142] The intrinsic value of the cylinder seals in the Cypriot society of the Late Bronze Age is demonstrated, as they correlate with other high-value goods in burial depositions, as least as far as we can see at Enkomi, the only site with a significant sample of cases. There, cylinders of all categories are more frequent in tombs containing substantial quantities of gold objects, the anticipated distribution if they were themselves

[1137] Smith (1994: 169); Webb (2002: 127); Knapp (2008: 171-172). The first of these four external cases of sealing is an impression from the Archives Deposit in the Palace of Knossos (ca. 1425-1350 BCE); the second occurs with a cuneiform inscription from Ugarit; and two others appear on two clay tablets bearing legal texts from the Archive of Rašapʾabu also at Ugarit. The use of sealings on legal texts is typical of Syrian palatial centers like Alalakh IV and Ugarit (Magness-Gardiner 1990).
[1138] Smith (1994: 152); Webb (2002: 127).
[1139] Webb (2002: 127-128).
[1140] Smith (1994: 106-142) apud Webb (2002: 128).
[1141] The first imports may have been seals that had been discarded or lost their function in the Levant, or they may have lost their primary purpose in Cyprus if they were brought by individuals established on Cyprus, but who had come from or travelled to Syria — here we can recall the presence of people described as "Alasiyans" in Alalaḫ in the 18th and 15th centuries (see 5.2).
[1142] Webb (2002: 131); Webb and Weingarten (2012: 90).

valuable.[1143] Especially in the Elaborate and Derivative styles, the use of imported raw materials, specialized labor, gold fittings, foreign/exotic iconography, signs of writing, and personalized designs in the manufacture of these pieces increased further their value. Their iconography suggests claims of a privileged relationship with the gods and heroic or "aristocratic ancestry", which in turn is reminiscent of an ideological defense of social and economic status.[1144]

Table 5.25: Categorization of Cypriot cylinder seals.[1145]

	Elaborate Style	**Derivative Style**	**Common Style**
Iconography and composition	Deities, animals and supernatural creatures; Near Eastern and Aegean elements Complex scenes: mostly humans, offering inverted animals to deities	Deities, animals and supernatural creatures; Complex scenes: mostly ritual performances or the adoration of a tree by animals	Standing male figure + concentric circles, ingots, tree and ox skull; seated figure with a spear + attendant, tree, snake and ox skull; schematic human and animals + abbreviated symbols
Writing / Script signs	Occasionally	Occasionally	Occasionally
Design variability	Highly individualized	Some recurrent compositions	Recurrent compositions
Raw materials	Mostly hematite (imported)	Mostly chlorite (imported)	Mostly chlorite (imported)
Technical investment	High; specialized tools	Medium; less specialized tools	Low; mechanical tools
Fitted with gold caps or mounted as jewelry	Frequently	Occasionally	Occasionally
Found outside Cyprus	More often than DS and CS	Occasionally	Rarely
Archaeological context (deposition)	Funerary (elite), cultic, industrial and storage facilities	Funerary (elite/"middle level"), cultic, industrial and storage facilities	Funerary (elite/"middle level"), cultic, industrial and storage facilities

If possession of these seals was a means of gaining such status, it is reasonable to think that in some cases the personalization of the object was effected by inscribing

[1143] Webb (2002: 133).
[1144] Webb (2002: 136-137).
[1145] Based on Porada (1948), Webb (2002: 118-126), and Webb and Weingarten (2012: 90).

the owner's name on it. This is quite plausible in the case of KOUR Psce 001, inscribed with a sequence ending in *-o*[?]*-ti*[?], the likely genitive case marker. The only other possible instance of this ending, however, is *ja*[??]*-pi*[??]*-lo*[??]*-ne*[??]*/ti*[??] in SYRI Psce 001. In many of the remaining examples of inscribed seals we would have to assume that a nominative form or the anthroponym or title was used. Whatever might be the case, expression of ownership through the inscription of the owner's personal name has long been posited as the meaning of at least some of the inscriptions on the cylinders.[1146]

Figure 5.2: Inscribed cylinder seal KOUR Psce 001 (not to scale) (courtesy of S. Ferrara).

In fact, in the case of Syro-Mesopotamian cylinder seals, legends of one or more lines began to be inscribed in the early 2nd millennium BCE to convey the owner's name, patronymic, rank or occupation, or patron deity, probably because their function was also dependent on the owner's identity. Such inscriptions are found on imported specimens found in Cyprus. At Ayia Paraskevi, the second site with most cylinders on the island, a burial yielded an Old Babylonian seal preserving the inscription "Nuttuptum, maidservant of the god Amurrum".[1147] A cylinder found at the Sanctuary of Ayios Iakovos-*Dhima* in a context dated to the LC IIIA (inv. no. Gjerstad no. 12),[1148] fitted with gold caps and containing the canonical attendant-and-god animal offering scene found in the Elaborate Style, bears a cuneiform logo-syllabic inscription. The first four signs read *mi*/*ṣil-la-ta-ja*/*wa* and were interpreted by Riedel as personal name, though one apparently unknown in the onomastica of the neighboring regions. The fifth and last character is difficult, but it is almost certainly a logogram representing the title of the seal's owner. [1149]

[1146] É. Masson (1971a: 25); *CMI* I: 69-70. Already Ward (1910: 345) says the inscription on KOUR Psce 001 may be a "proper name".
[1147] Merrilees (1986) and Schaffer (1986) apud *CMI* I: 69, fn. 143.
[1148] Riedel (1934: 576-577) apud Gjerstad et al. (1934); Kenna (1967: 567).
[1149] Riedel (1934: 576-577) interpreted it as TUR 'young (child)' or LUB 'singer', but gave preference to the former reading and speculated that its meaning would have been specifically 'prince'. Its shape, however, seems unusual for a Late Bronze Age TUR, which means it either is a mistake of the engraver or represents another grapheme. Another possibility is that it is actually a conflation of two Sumerographic signs, NU.BANDA$_3$, which would correspond to Akkadian *laputtû* 'lieutenant, captain'. I am thankful to J. P. Vita and M. Molina (CSIC) who, very cautiously and based only on the drawing,

Figure 5.3: Drawing of the cylinder seal from Ayios Iakovos-*Dhima* in impression (Gjerstad et al. 1934: no. 12).[1150]

Unless we assume that in such cases the seal came to Cyprus along with its owner, their legend must have ceased to be functional after the item was imported. Yet there is the notable example of CYPR? Psce 002, an imported cylinder with two inscriptions, one in cuneiform logo-syllabic and the other in Cypro-Minoan. The cuneiform legend, somewhat effaced, reads *Te-ḫe-eš-ta-ḫe* DUMU *Qé-eš-ti-ia* 'Teḫeštaḫe, son of Qeštiya'; both are Hurrian names, the patronymic being attested at Nuzi. The Cypro-Minoan inscription was added at a later stage: 110-30 | 12-68 → *ke*/*u*[??]-*zi*[??] | *po*[??]-*nu*[??]. The engravers of Cypriot seals were certainly aware of the use of inscriptions on the imported Syro-Mesopotamian specimens they re-cut. What we do not know for sure is to what extent they were aware of the meaning of the inscriptions. We may wonder if knowledge of the foreign practice of identifying the owner of the object by means of writing led whoever oversaw their production in Cyprus to implement a similar practice. The percentage of inscribed cylinders from of Mari, Alalah VII and IV and Ugarit ranges from 1 to 8%,[1151] and a similarly low percentage can be estimated for the Cypriot seals that bear Cypro-Minoan writing (16 cases, if we discount SYRI Psce 001), a datum that suggests a comparable use of the inscriptions on the two sides of the sea.

The support for the foregoing scenario does not wane when we look at the comparative evidence. It seems that it was a generalized practice in the regions surrounding Cyprus to inscribe seals of all kinds with personal descriptors. The abovementioned cases of cylinders bearing cuneiform legends are not the only examples of foreign seals with inscriptions of this type. A stamp seal from Hala Sultan Tekke

suggested this reading to me (pers. comm.). Regardless of which solution is correct, all roads seem to lead to a title.

[1150] Gjerstad et al. (1934: Pl. Cl. 8) apud Kenna (1967: 565).

[1151] Magness-Gardiner (1990: 75).

reportedly bears the Anatolian hieroglyph SCRIBA 'scribe'.[1152] Similarly, a Hittite gold signet ring from a tomb at Politiko-*Lambertis* (central Cyprus) contains a difficult inscription that may include the Anatolian hieroglyphic sign SACERDOS$_2$ (𔓁) 'priest'.[1153]

As a final note: in some cases (CYPR? Psce 003, SALA Psce 001, ENKO Psce 003 and 005, and PPAP Psce 001), one or two signs of writing may have been added to Cypriot cylinders not as true writing, in the sense of it expressing something linguistically meaningful, but rather as iconic supplements that added to the intrinsic value of the object and the status of its carrier. Remarkably, one of the possible cases, ENKO Psce 003 (see Appendix A), is so far the earliest inscribed cylinder seal and one of the first Cypro-Minoan inscriptions.

5.6.2.4 Ceramic vessels ENKO Avas 002 and 005 and IDAL Avas 001

Unfortunately, no context is reported for ENKO Avas 002 and 005,[1154] while IDAL Avas 002 was found on the surface of the West Acropolis of Idalion-Ambileri.[1155] The latter has been dated to ca. 1100 BCE (i.e. LC IIIC) but the reasons are not provided in the publication. The only informative detail is that the three objects seem to correspond to large containers: ENKO Avas 002 and IDAL Avas 001 are identified as pithoi (one fragmentary the other a fragment) inscribed on the rim, while ENKO Avas 005 as the handle of a big amphora, albeit with a question mark. This suggests that the inscriptions were related with the management of the commodities contained in these containers, regardless of whether they refer to aspects of production, distribution or consumption, and irrespective of whether their context is to be labelled "administrative" or "cultic". Therefore, the sequences inscribed on ceramic containers may have had a variety of meanings.

5.6.2.5 Ivory objects from "Temple 4" at Kition-*Kathari*

Located in the Area II of Kition, "Temple 4" is an ashlar building whose structure is analogous to "Temple 5" and therefore they are interpreted as twin sanctuaries.[1156] It

[1152] P. Åström and É. Masson (1981: 99-100).
[1153] See Buchholz and Untiedt (1996: 71, fig. 14a).
[1154] *HoChyMin*: 176, 179; *CMI* II: 58, 60.
[1155] Gaber and Bazemore (1999: 239) apud Vetters (2011: 17, fn. 140) and *CMI* II: 64.
[1156] Temple 5 is thought to be devoted to a male fertility deity based on the evidence of ox horns and fifteen skulls of young bulls and a cow, cleaned from the back to be worn as masks, and anchors (*CMI* I: 125, fn. 128). Ox skulls were found at the "Sanctuary of the Horned-God" in Enkomi, where the presumable *adyton* contained a bronze horned male figurine. It is noteworthy that a 1st century description of the Phoenician goddess Astarte (Philo of Bylos, *Fragments*, 31-2) has her using a bull's head as an emblem of kingship while ruling the land with Zeus (i.e. Phoenician Baʿl?), while 2nd-century Pseudo-Lucian describes the wearing of ox masks as a worshipping practice to several "gods" at the Temple of Astarte in Hierapolis (Syria) (Bloch-Smith 2014: 170). As regards the anchors, a Greek inscription from Delos (*Ins. Délos* 2132 apud Bloch-Smith 2014: 91, fn. 94) attests to a dedication to Isis-*Soteira*-Astarte-

features a large rectangular hall and two small rooms (38B-C) and a "vestibule" (38-A) at the rear. Room 38C has been interpreted as an *adyton* or *sanctum sanctorum*, which are terms taken from Classical architecture to refer to small spaces at the back of temples whose function was to house the image of the deity. Ferrara makes the plausible point that no statues or figurines were retrieved and that there is a distinct possibility that these were storage spaces, not *adyta*.[1157]

The two inscribed ivories found in Temple 4 which concern us here are KITI Iins 001, a plaque depicting an anthropomorphic figure consistent with the Egyptian representations of the god Bes (but not necessarily representing a Cypriot deity with the same name), and Ipla 001, a pipe. They come both from Room 38c and were found in association with other ivory objects (including an inscribed rod, KITI Iins 002), a bone spindle whorl, a bronze pin, a boat-shaped earring, a bronze dagger, beads, Plain White Ware, amongst other materials. The uninscribed ivories were a plaque representing a lion and a handle. The assemblage contained also ten ceramic bowls, various bronze objects (a double-edged dagger, a rim fragment, possible disc-scales, a peg, a flat tool and a boat-shapes earring) and faience beads. They were found in a layer of debris of red mudbricks and charcoal on Floor IIIA, presumably the consequence of a destruction dating to c. 1220-1190 BCE, and apparently sealed by the rebuilding that inaugurated the phase of Floor III.[1158]

Ferrara argues that the inscriptions on the pipe and the Bes plaque "were not applied at the stage of original manufacture" and that, apparently, they "were meant to be suspended". She further notes that the inscriptions on KITI Ipla 001, on both sides, are "upside down in respect to how the figure of Bes is orientated" and duly concludes that the functions of the plaque and the inscriptions are not interdependent. In other words, the inscription may have been added to the object after it had lost its primary function (furniture piece?) and acquired a secondary one, most likely linked with its high intrinsic value as an ivory item.[1159]

Given the context, the default interpretation has been that they "were [possibly] votive offerings or sacred objects connected with the cult in the temple".[1160] The one close typological parallel for the "Bes" plaque inscription is an inscribed ivory plaque from Sarepta (Lebanon), found "at the northwest corner of a small shrine in the industrial area of the city", whose occupation was dated from the late 8th through the 6th century BCE.[1161] Although it comes from the neighboring Levant and a presumably cultic context, it is later and, unlike the Cypro-Minoan example, it is a simple aniconic and rectangular plaque. The inscription is also somewhat longer. The proposed

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Aphrodite-*Euploia*, the last word meaning '(of the) fair (sea-)voyage'. These are all later testimonies but they show it is still possible that the material reality of Temple 5 related to a female deity.

[1157] *CMI* I: 125: fn. 127.

[1158] Karageorghis (1976b: 125).

[1159] *CMI* I: 168.

[1160] Karageorghis (1976b: 125).

[1161] Amadasi Guzzo (1990: 62), with references.

translation of its four lines reads: "This statue/image ŠLM, son of M/PLʕL, son of ʕZY, made for Tanit-Aštart".[1162] This example supports the votive interpretation for KITI Ipla 001 and the idea that it may contain a divine name, a personal name (of the dedicant), or both. The same applies to the pipe.

5.6.3 Interpretation

> *Ces exemples, et surtout les séquences qui sont attestées sur le cylindre de Kourion et l'anse d'Enkomi, permettent de supposer qu'il s'agit de la même categorie de noms que sur les boules, mais qu'ils sont pourvous d'un suffixe qui pourrait indiquer une notion comme l'appartenance ou la destination.*
>
> É. Masson[1163]

82-96-88- → *sa*[??]*-ri*[?]*-jo*[?]- and 110-23-59- → *ke*/*u*[??]*-ti*[?]*-zo*-[??-]

The sequence 82-96-88- is mentioned four times in Enkomi, three of them in the Enkomi cylinder, where the form 82-96-88-23 is clearly a relevant subject (ENKO Arou 001.02, 09, 26). In the list-like section of the cylinder, it appears in two entries, *mo*[??]*-sa*[??] | *sa*[??]*-ri*[?]*-jo*[?]*-ti*[?] (l. 02) and *sa*[??]*-ri*[?]*-jo*[?]*-ti*[?] (l. 09). The third occurrence is the last part of the text (l. 26) which is more difficult to understand. Here it is found shortly after 82-75-99 → *sa*[??]*-ra*[?]*-ni*[??], a word which is phonographically similar to *sa*[??]*-ri*[?]*-jo*[?]- (both probably begin with *sa-r-*) and is repeated two other times in the cylinder, therefore being equally relevant to its subject matter. The fourth attestation at Enkomi is on the clay ball ENKO Abou 031, but the context of the latter is not known.[1164] 61-85-88 on ENKO Abou 068 might be a mistake for 82-85-88 → *sa*[??]*-ri*[?]*-jo*[?] (see Appendix A), but this is very uncertain.

We also find *sa*[??]*-ri*[?]*-jo*[?], apparently defaced, in KITI Iins 001, the ivory pipe found in the Temple 4 of Kition and dated to the LC IIIA. The whole inscription reads:

.01	107-104-23	→	*za*$_2$[??]*-i*[?]*-ti*[?]
.02	82-96-88 | 110-23-59(-21)-23 | 102	→	*sa*[??]*-ri*[?]*-jo*[?] | *ke*/*u*[??]*-ti*[?]*-zo*[??](*-ko*[?])*-ti*[?] | *a*[?]

Here *sa*[??]*-ri*[?]*-jo*[?] immediately precedes *ke*/*u*[??]*-ti*[?]*-zo*[??](*-ko*[?])*-ti*[?]. It cannot be a coincidence that the latter is a variant of *ke*/*u*[??]*-ti*[?]*-zo*[??], attested on clay ball ENKO Abou 062 from the Sanctuary of the Ingot God at Enkomi (LC IIIB context). Clearly the meaning of *ke*/*u*[??]*-ti*[?]*-zo*[??] is related to the cultic contexts where it is found, so a theonym and a priestly title, or even the name of an individual closely connected to the religious sphere, are attractive possibilities. The possible sign between CM 59 *zo*[??] and 23 *ti*[?] entangles the reading of *ke*/*u*[??]*-ti*[?]*-zo*[??](*-ko*[?])*-ti*[?], but if it is a mistake (for example, a first

[1162] Amadasi Guzzo (1990: 62).
[1163] É. Masson (1971a: 25).
[1164] *CMI* II: 27.

attempt at drawing the final 23 *ti*[?]), then we have *ke*/*u*[??]-*ti*[?]-*zo*[??]-*ti*[?], probably the possessive form of *ke*/*u*[??]-*ti*[?]-*zo*[??]. Yet, even if the correct reading is *ke*/*u*[??]-*ti*[?]-*zo*[??]-*ko*[?]-*ti*[?], the word is still likely to be in the genitive case. Thus, since this sequence comes immediately after *sa*[??]-*ri*[?]-*jo*[?], what we have is probably "*sa-ri-jo* of *ke*/*u-ti-zo*."

Ferrara argues that *sa*[??]-*ri*[?]-*jo*[?]- was deliberately defaced on the pipe and that it was possibly "subjected to some sort of *damnatio memoriae*".[1165] In the ancient Eastern Mediterranean, particularly in the New Kingdom Egypt, the targets of *damnatio memoriae* were typically deities, monarchs and other influential individuals.[1166] This would make a divine or personal name the most likely interpretation of *sa*[??]-*ri*[?]-*jo*[?]-, without excluding an occupational title indicating a high rank. The case of a silver bowl from Kourion (*ICS* 180a) inscribed in the Cypriot Greek syllabary supports this interpretation. The vessel contains two inscriptions. The earliest belongs to king Akestor of Paphos and was inscribed in the Paphian variety of the script, but the royal title 'king' (*pa*-*si*-*le*-*wo*-*se*) is damaged. The fact that the personal name was left untouched suggests perhaps an intentional erasure of the royal title. The later inscription reads "I am Timukretes'". Egetmeyer suggests that the bowl was brought as war booty from Paphos to Kourion, where its new owner erased the relevant part of the original inscription and made his own.[1167]

Table 5.26: Repetitions and interrelations of the most disseminated Cypro-Minoan sign-sequences (by medium and archaeological context)

Enkomi clay cylinder (ENKO Arou 001) List / Administrative (?)	**Enkomi clay balls (ENKO Abou)** PNs / titles / DNs (?)	**High-value / Cultic portable objects** PNs / Titles (possessive)
—	*ke*/*u*[??]-*ti*[?]-*zo*[??] Sanctuary of the Ingot God	*sa*[??]-*ri*[?]-*jo*[?] | *ke*/*u*[??]-*ti*[?]-*zo*[??](-*ko*[?])-*ti*[?] Ivory pipe, Temple 4 Kition
mo[??]-*sa*[??] | *sa*[??]-*ri*[?]-*jo*[?]-*ti*[?] (…) *sa*[??]-*ri*[?]-*jo*[?]-*ti*[?]	*sa*[??]-*ri*[?]-*jo*[?]	*sa*[??]-*ri*[?]-*jo*[?] | *ke*/*u*[??]-*ti*[?]-*zo*[??](-*ko*[?])-*ti*[?] Ivory pipe, Temple 4 Kition *sa*[??]-*ri*[?]-*jo*[?] effaced
ke/*u*[??]-*a*[?]-*ma*[??]-*ta*[?] | *si*[??]-*na*[?]-*ke*/*u*[??]-*ro*[?]-*ti*[?]	—	*si*[??]-*na*[?]-*ke*/*u*[??]-*ro*[?]-*ti*[?] Hematite cylinder seal
—	*a*[?]-*mo*[??]-*ta*[??]-*ro*[?] (Cf. *Amutaru*, PN at Ugarit)	*a*[?]-*mo*[??]-*ta*[?]-*ro*[??]-*ti*[?] Ivory "Bes" plaque, Temple 4 Kition

[1165] *CMI* I: 120.
[1166] Brand (2000: 24-26).
[1167] *DGAC*: 669. For the idea that this bowl and other objects were brought from Paphos as loot, see Mitford apud O. Masson (1984: 82).

To recapitulate, contextual data suggests that *ke*/*u*[??]-*ti*[?]-*zo*[??]- is the name of a deity, a cultic office or the name of a high-ranking individual related to the religious sphere. The same possibilities exist for *sa*[??]-*ri*[?]-*jo*[?]-. The result is a myriad of possible combined interpretations for "*sa-ri-jo* of *ke*/*u-ti-zo*": e.g. "priest of the K.-god", "S. son of K.", and so forth.

The sign-group (-)82-85-88-97-23 → (-)*sa*[??]-*ri*[?]-*jo*[?]-*ro*[?]-*ti*[?], inscribed on the handle of a ceramic container (whose context is not reported[1168]), needs to be considered as well. Sequences with final -97 → *ro*[?] are recurrent on the clay balls whereas final -*ro*[?]-*ti*[?], probably in what are genitive forms of words with final -97 → *ro*[?], appear on ENKO Arou 001 and portable objects of high-value. It is likely that they represent personal names or titles, the paradigmatic cases being *si*[??]-*na*[?]-*ke*/*u*[??]-*ro*[?]-*ti*[?], for its use on a cylinder seal, and *a*[?]-*mo*[??]-*ta*[?]-*ro*[?] ~ *a*[?]-*mo*[??]-*ta*[?]-*ro*[?]-*ti*[?], comparable to Amutaru, a personal name of uncertain etymology attested at Ugarit (see 5.7.1). If -*ro*[?] is a formant of nouns or personal names, then (-)82-85-88-97-23 → (-)*sa*[??]-*ri*[?]-*jo*[?]-*ro*[?]-*ti*[?] could be the genitive of a name/noun (-)*sa*[??]-*ri*[?]-*jo*[?]-*ro*[?], itself derived from *sa*[??]-*ri*[?]-*jo*[?]. This clue, however, does not narrow down the interpretative scenarios: *sa*[??]-*ri*[?]-*jo*[?] could be a theonym from which a personal name *sa*[??]-*ri*[?]-*jo*[?]-*ro*[?]- was derived, but it could be also a proper name itself, in which case *sa*[??]-*ri*[?]-*jo*[?]-*ro*[?]- could be e.g. a hypocoristic form. A possible parallel could be 27-08-70 → *si*[?]-*na*[??]-*ki*[?] (ENKO Abou 053) and 27-08-110-97- → *si*[?]-*na*[??]-*ke*/*u*[??]-*ro*[?]- (KOUR Psce 001) (see below).

Finally, if *sa*[??]-*ri*[?]-*jo*[?]- is a personal title of high rank, it is tempting to compare Hurrian *šarri* 'king' < Akkadian *šarru*,[1169] but it arguably would be surprising to find the Akkado-Hurrian term and not the widespread West-Semitic **malku* 'king' (< 'counsellor') as a borrowing in Cyprus.[1170] It is true that Alasiyan rulers used Akkadian for their international correspondence in the 14th and 13th centuries BCE, but, since no evidence for a direct Syro-Mesopotamian dominion over the island is documented, it is hard to think of a context in which the Akkadian title of kingship would have become fashionable in the island. Notice that Akkadian proper *šarru* and the Ugaritic Akkadianism *šr* are dismissed as comparanda because, unlike the Hurrian word, their vocalism does not match the Cypriot reading. Another possible comparandum is Egyptian *sr* 'official, councilor, notable' (> Coptic ⲥⲓⲟⲩⲣ).[1171] If Hess is right that this word is reflected in *Šarru* (*ša-ar-ru*), a personal name in one of the cuneiform letters from El-Amarna (EA 162), then its pronunciation was most likely /sʲaru/. Thus, the vocalism and the lack of a foreseeable context for its borrowing into Cyprus pose obstacles to this word as well.[1172] None of these issues exist in the case of *sa-ra*$_2$,

[1168] *CMI* II: 58.
[1169] For the Hurrian word, see Wegner (2007: 205). On Akkadian *šarru*, see *CAD* Š2: 76.
[1170] At Ugarit, Akkadian *šarru* 'king' is glossed in multilingual lexical lists with Ugaritic *malku* and Hurrian *iwirni* (see Huehnergard 2008: 26).
[1171] Junge (2005: 351).
[1172] At Alalaḫ, the names *Sarra* and *Sarruwe* are abundantly attested and, since Hess does not, in fact, Hess justify his equation of *Šarru* with Egyptian *sr*, perhaps the three are connected.

perhaps /sarʲa/ or /salʲa/, a much-repeated sign-sequence in the Linear A accounting tablets from Agia Triada.[1173] The disadvantage in this case is that the word is undeciphered and all we know is that it must conceal an important entity, as it deals in many instances with different types of commodities. If this was an elite Minoan personal title, it might have reached Cyprus along with other Aegean cultural items.

Still, none of the clues here scrutinized lead to solid results.

27-08-110-97-23 → *si*[?]*-na*[??]*-ke*/*u*[??]*-ro*[?]*-ti*[?]

This sequence is part of the enumeration in the first lines of the clay cylinder ENKO Arou 001 and the sole text of a cylinder seal from Kourion (KOUR Psce 001). The basic form, without the ending *-o*[?]*-ti*[?], is *si*[?]*-na*[??]*-ke*/*u*[??]*-r*(*o*)[?]-. This is reminiscent of Hurrian *šina=ġe=li* /sinaɣeli/ 'of second rank',[1174] which made its way into Akkadian as *šinaḫilu* 'second-in-command'[1175] and underlies Ugaritic *ṯnġly* 'deputy, second, of lower rank',[1176] probably */θinaɣilVju/ or */sinaɣilVju/. The presence of the word in Ugarit, as well as in Anatolia, shows that it was a widespread *Kulturwort* that, once it had reached coastal Syria, may well have crossed the sea and reached Cyprus. Functionally, the sense is in harmony with the expected use of inscriptions on cylinders seals for the display of its owner's personal name, title or both.[1177] Phonologically, the identification seems more complicated. While the correspondence of *ke*/*u*[??] with Hurrian /ɣe/ is not necessarily an issue, the rendering of the lateral with *r*[??] is, so the comparison remains conjectural. If the word is Cypriot, it may have some connection with 27-08-70 → *si*[?]*-na*[??]*-ki*[??] from clay ball ENKO Abou 053 (a personal name?).

41-41-97 → *zi*[??]*-zi*[??]*-ro*[?]

The word appears in three different contexts: as part of the enumerative section of the Enkomi cylinder, as the only sequence inscribed on a vessel from Idalion and as the only text on the clay ball from Tiryns. The reading leads to no recognizable word. Based on the final -97 → *-ro*[?], it could be a Cypriot personal name (cf. *a*[?]*-mo*[??]*-ta*[??]*-ro*[?]), but nothing else can be said.

102-73-04-97 → *a*[?]*-mo*[??]*-ta*[??]*-ro*[?] and 102-73-04-97-23 → *a*[?]*-mo*[??]*-ta*[??]*-ro*[?]*-ti*[?]

The same reading is found already in the work of Nahm, who brilliantly identified it with *Amutaru*, a personal name from Ugarit, spelled *a-mu-ta-ri*/*a-mu-ta-ra* in the genitive and accusative cases. Nahm also noticed the similarity to another personal

[1173] For the Linear A evidence, see Tomas (2001: 50-51). Davis (2014: 201, fn. 1155) speculates, in passing, that *sa-ra*$_2$ may be the Minoan word for 'palace', but a high-rank personal title is not be impossible.
[1174] See Giorgieri (2000: 210).
[1175] *CAD* Š3: 36f.
[1176] *DULAT*: 922.
[1177] Cf. the possible use of the title 'lieutenant' (NU.BANDA$_3$) in the cylinder seal from Ayios Iakovos-*Dhima* (section 5.6.2.3, fn. 1149).

name attested at the Syrian city, spelled alphabetically as *amtrn* and syllabically as *a-mu/a-ta-ru-nu*, among other orthographic variants.[1178]

According to an Akkadian letter found in the Archive of Rapʾānu (RS 20.184),[1179] Amutaru was an envoy of ʿAmmištamru II (1260-1235 BCE), king of Ugarit, to the court of Karkemiš, whose mission was to acquire two exquisite horses and a high-quality bow.[1180] Singer argues that this Amutaru was the same individual as the abovementioned Ama/utarunu, who received lands from ʿAmmištamru II.[1181] The name is attested in five alphabetical texts (as *amtrn*) and six syllabic (thrice as *Amutarunu*, twice as *Amatarunu*, and once as fragmentary [*Ama*/*ut*]*arunu*). Most of these texts deal with concessions of real estate (salt works, houses and fields) to a person named Ama/utarunu, or mention him as the owner of such. The concessions are made by ʿAmmištamru II or else the texts date to his reign. One tablet mentions Amutarunu possibly as a "merchant" (Akkadian *tamkāru*). This is not established beyond doubt as his profession, but it would agree well with the suspicions that this person was not originally from Ugarit. In two cases, a document mentions an individual said to be the son of a man that goes by the name Amutarunu. The two individuals in this position bear Semitic names, Gamiraddu and ʿAbdi-malku, which does not automatically make their father a local: giving local names to his children may have been Amutarunu's form of integrating his family in the society of Ugarit. Based on the fact that the name is uncommon in the texts of Ugarit, Van Soldt argues that all these mentions of Ama/utarunu refer to the same person.[1182] It is also tempting to equate Amutaru and Ama/utarunu, as Singer did, precisely because the names lack good Semitic or Hurrian etymologies and are rare. The fact that their forms do not coincide entirely could be seen as an obstacle, but the possible solution is provided the name of another high-ranking official of ʿAmmištamru II: Taguḫlinu. This name was borne by the likely predecessor of Amutaru as an envoy at Karkemiš,[1183] but it was also the name of an individual from which Gamiraddu (the son of Amutarunu?) inherited land.[1184] Now the name Taguḫlinu/Tagḫulinu appears always in this form at Ugarit (alphabetically as *tgġln*), but certain texts from outside the city mention a Taguḫli who scholars believe is the same person.[1185] For Singer, the form with *-nu* "is obviously an Akkadianization that is more current at Ugarit" and Tagḫulinu is just Taguḫli after undergoing this process. Akkadian or not, *-nu* seems to behave as hypocoristic formant.[1186] The parallel of *Taguḫli ~ Tag*(*u*)*ḫ*(*u*)*linu* and *Amutaru ~ Ama*/*utarunu* is therefore compelling.

[1178] Nahm (1981: 62). For the names, see Grøndahl (1967: 304); *DULAT*: 75.
[1179] Nougayrol (1968: 97ff); Lackenbacher (2002: 96).
[1180] Singer (1999: 655). Amutaru's office is described as *zarqu*, a word of uncertain meaning.
[1181] Singer (1983: 8, n. 10).
[1182] Van Soldt (2010a: 158-159).
[1183] Singer (1999: 655)
[1184] Van Soldt (2010a: 159).
[1185] Singer (1983); Lackenbacher (2002: 311, fn. 1132).
[1186] Evidently, a hypocoristic is not necessarily shorter than the original form of the name. Portuguese *Carlitos* (< *Carlos*) or Greek *Stefanoula* (< *Stefanía*) will suffice as examples.

Thus, *Amutaru* may be the individual's original foreign name and *Ama*/*utarunu* the endearing or informal version of his name used in the high society of Ugarit. The variation *a* ~ *u* in *Ama*/*utarunu* suggests a vowel that did not have an exact correspondent in the phonological system of Akkadian, and in this regard it is tantalizing that the corresponding vowel in the Cypro-Minoan spelling is *o* (*a*[??]-***mo***[??]-*ta*[??]-*ro*[?]). Moreover, even if the name is not Cypriot, but Levantine, the presence of foreigners as Cyprus is as expected as the well-documented presence of foreigners in the society of Ugarit. The appearance of *i-li-pa-li*, possibly a West-Semitic name, in the clay ball ENKO Abou 080 is a case in point (see below). Therefore, Nahm's identification is convincing and thus *a*[??]-***mo***[??]-*ta*[??]-*ro*[?] appears at both sides of the sea. Notice that in Cyprus it is attested in documents ranging from the LC II to the LC IIIB, so on the island it almost certainly refers to different individuals.

What does this interpretation tell us about our Cypro-Minoan inscriptions? The normal (nominative?) form *a*[?]-*mo*[??]-*ta*[??]-*ro*[?] occurs in the balls ENKO Abou 015, 021 and 045, as well as in the inscribed pithos labelled ENKO Avas 002. For *a*[?]-*mo*[??]-*ta*[??]-*ro*[?]-*ke/u*[??]-*mo*[??] | *ri*[?] (ENKO Abou 021) as a mistake for *a*[?]-*mo*[??]-*ta*[??]-*ro*[?] | *ke/u*[??]-*mo*[??]-*ri*[?], see section 5.6.2.2. Presumably, the function of the word in these cases is simply "nominal". Conversely, in the ivory plaque from Temple 4 at Kition (KITI Ipla 001.*v*) we find the suffixed (possessive?) form *a*[?]-*mo*[??]-*ta*[??]-*ro*[?]-*ti*[?], probably indicating ownership of the object (cf. Table 5.26). In ENKO Abou 021, *ke/u*[??]-*mo*[??]-*ri*[?] (may be the title or another kind of descriptive of the named individual. In Ugaritic there is a word *ġmr* which the specialists interpret variedly as 'of a supplementary or subordinate social duty/class', 'inexperienced, apprentice', or 'recruit', and whose etymology is uncertain.[1187] In light of its semantics, it is attractive to compare this term to Cypro-Minoan *ke/u*[??]-*mo*[??]-*ri*[?]. Unfortunately, the alphabetic spelling is supplemented by syllabic *ḫa-ma-ru-ú*[, *ḫa*-[*a*]*m*-[*r*]*u-ú* and *ḫa-am-ru-*, implying a phonological form /ɣam(a)ru/ that is hard to reconcile with /Ke/umori/(?).

This identification of *a*[?]-*mo*[??]-*ta*[??]-*ro*[?] with *Amutaru* validates the following phonetic values, all of which have already received support from identifications in RASH Atab 004: CM 04 → *ta*[??]; CM 73 → *mo*[??]; CM 97 → *ro*[?]; and CM 102 → *a*[?].

5.7 OTHER IDENTIFICATIONS

5.7.1 Other sequences in the clay balls

To avoid fortuitous matches, I will only consider sequences of four or more signs. To illustrate the dangers of short sequences, let us look at the example of 46-70-17 →

[1187] See *DULAT*: 322, with references, and Huehnergard (2008: 165). The etymology is uncertain, but the word has been linked to Arabic *ġum(u)r* 'inexperienced' (see Bravmann apud *DULAT*) and is probably Semitic.

s/*tu*[??]-*ki*[?]-*no*[?] (ENKO Abou 073). This reading compares well with Ugaritic *s*/*śkn* = LÚ *zaki(n)ni* (genitive) /ʦākiⁿnu/ 'perfect, governor; administrator' and related Levantine forms such as Alalaḫ Akkadian *sākinu* and El-Amarna Canaano-Akkadian *zukini*/*a* (genitive and accusative).[1188] Tropper reconstructs a variant /ʦōkinⁿ-/ based on the El-Amarna form, which is attested in letters sent from Canaan[1189] and shows the Canaanite *a* > *o* shift not seen in Ugaritic /ʦākiⁿnu/.[1190] Cypro-Minoan *s*/*tu*[??]-*ki*[?]-*no*[?] would therefore be acceptable only as a West-Semitic loanword from a Canaanite-speaking area, and at the same time the syllabogram CM 46/47 would have to stand for an affricate *zu*[??] (which is possible, if the Cypriot sign denotes the outcome of the affrication of /t/ before /u/, according to the hypothesis in 3.4.9). However, even with all these licenses the vocalism would not correspond perfectly. The obstacles to identifying 46-70-17 as a loanword from Canaanite /tsōkinⁿu/ are therefore manifold, and the fact that this is a three-sign sequence only increases the chances of accidental similarity.

104-09-06-09 → *i*[?]-*li*[?]-*pa*[??]-*li*[?] (ENKO Abou 080)
This reading was first proposed by É. Masson in her decipherment-oriented works and still holds. Her interpretation of it as a West-Semitic name /ʾIlībaʿl/[1191] 'My god is Baʿal/Baʿlu' is compelling, although it is possibly not the Ugaritic form *ilbʕl*, for which we would expect the vocalization /ʾIlībaʿlu/.[1192] It may be a Canaanite form. Alongside 102-73-04-97 → *a*[?]-*mo*[??]-*ta*[?]-*ro*[?] (ENKO Abou 015, 020 and 045), this reading supports the notion that the clay balls contain mostly personal names.

This identification validates the following phonetic values: CM 06 → *pa*[??]; CM 09 → *li*[?]; and CM 104 → *i*[?]. Notice that the last two sign values have already received support from identifications in RASH Atab 004.

5.7.2 Syrian cylinder seal SYRI Psce 001

This seal reads 71-50-05-<u>23</u> → *ja*[??]-*pi*[??]-*lo*[?]-*<u>ti</u>*[?]. Although in theory the last sign could also be CM 56, sign 23 is consistent with a possessive form in *-o-ti*, which in turn suits the type of inscription expected on a cylinder seal. We can now compare 27-08-110-97-23 → *si*[?]-*na*[??]-*ke*/*u*[??]-*ro*[?]-*ti*[?] in KOUR Psce 001. Thus, we should expect *ja*[??]-*pi*[??]-*lo*[?]-*<u>ti</u>*[?] to be the genitive of a name or title whose basic form or "stem" is *ja*[??]-*pi*[??]-*l*(*o*)-[?]. This is consistent with a West-Semitic name *Yabbi-ʾIlu* /Jabbi-ʾilu/ 'ʾIlu named/called'. The name is not attested directly in Late Bronze Age Syria, but at Emar we find the hypocoristic *Iabbi* (*Ia-ab-bi*), representing the verbal form (<**yanbi*), whereas from the Ur III period we have the early Amorite form of the name itself, *Yanbi-ʾIlum* (*ia-an-bi-i-*

[1188] *DULAT*: 757. Huehnergard (2012: 157).
[1189] Tropper (2012: 47). See also *CAD* S: 354.
[1190] Sivan (1984: 29, 267).
[1191] É. Masson (1973: 43; 1974: 40).
[1192] *DULAT*: 53-54, 206.

lum).[1193] Hence, Cypriot language the meaning of the inscription could be "(Cylinder) of Yabbi-ʾIlu". Notice that the sealing comes from an uncertain location in coastal Syria (Ugarit?). Nonetheless, as the name is not directly attested in Syria, this interpretation is only tentative.

5.7.3 Looking for Alasiya

Steele has made the point that, be it with the very few sign values she considers certain, be it with the "often dubious assignment of phonetic values to the signs" by É. Masson (other proposals such as those of Saporetti and Nahm are not considered), one is unable to locate the sequences "107-050-083 (*ku-pi-ri*), 107-006-075 (*ku-pa-ra*), 107-011-033 (*ku-pe-re*), 102-087-027 (*a-la-si*)". Her warning that this failure "cannot be seen as significant" given the limits of the corpus and the evidence is judicious.[1194] However, the uncertainty about the ways in which meaningful units were expressed in the Cypro-Minoan script, as well as the grammatical behavior of the underlying language(s), should also make us wary of looking for well-known ethnonyms only as sequences of signs, not strings. A given place-name might be disguised by affixes that are attached to it in a single group of signs. Maltese *mill-Italja* 'from Italy' and Sotho *Setaliana* 'Italian' are examples of words containing an element that corresponds to the place name 'Italy', but in neither case at the beginning, given the grammatical rules of the respective languages. With Cypro-Minoan, this *possibility* is well illustrated by the CM 2 sequences 38-87-87-27 → *e*$^{?}$*-la*$^{?}$*-la*$^{?}$*-si*$^{??}$ (ENKO Atab 002.B.I.23) and 38-87-87-47-95 → *e*$^{?}$*-la*$^{?}$*-la*$^{?}$*-s/tu*$^{??}$*-wa*$^{??}$ (ENKO Atab 002.B.I.09). If their reading is correct, both contain a phonographic string *-a*$^{?}$*-la*$^{?}$*-s*(*/t*)$^{??}$- that *could in theory* conceal 'Alasiya', especially if *e*$^{?}$*-l*(*a*)$^{?}$- represented a prefix of some sort (see 4.2.2.3.15). If it did, a search for self-standing ***a-la-s*- would miss it. Notice that my point is not to argue that *e*$^{?}$*-la*$^{?}$*-la*$^{?}$*-si*$^{??}$ and *e*$^{?}$*-la*$^{?}$*-la*$^{?}$*-s/tu*$^{??}$*-wa*$^{??}$ are to be interpreted as references to Alasiya, but only to emphasize that they *could* be.

5.8 SUMMARY OF THE RESULTS

Following is a summary of the results of the three analytical procedures conducted in Chapters 3, 4 and 5, presented sign by sign. The certainty of the phonetic reading of each sign is presented according to the methodology established in the Introduction.

CM 01: → *we*$_2$$^{??}$
Comparative evidence: It corresponds only to CGk *we*.
Internal evidence: None.

[1193] O'Connor (2004: 467, with reference to Ur III, AS 21 331).
[1194] Steele (2013: 78).

Readings: It participates in a single doubtful identification:

38-**01**-04-82-09 → *e*[?]-***we*$_2$**[??]-*ta*[?]-*sa*[?]-*li* (RASH Atab 004.B.16)

CM 02 → *ne*[??]

Comparative evidence: It is similar to LA 24/*ne*[??] and is possibly the predecessor of CGk *ne*. This last correspondence would be reinforced if it can be confirmed that CM 02 is a variant of CM 34/56 (see below).

Internal evidence: None.

Readings: It is involved in a single dubious identification:

102-**02**-100 → *a*-***ne***[?]-*ni*[?] (RASH Atab 004.B.16)

CM 04 → *ta*[?]

Comparative evidence: It matches LA 24/*da* and CGk *ta*.

Internal evidence: None.

Readings: It participates in six identifications:

04-08-100 → ***ta***[?]-*na*[??]-*ni*[?] (RASH Atab 004.A.10)

04-71-100 → ***ta***[?]-*ja*[?]-*ni*[?] (RASH Atab 004.A.05)

37b-**04**-100 → *zi*[?]-***ta***[?]-*ni*[?] (RASH Atab 004.A.09)

38-01-**04**-82-09 → *e*[?]-*we*$_2$[??]-***ta***[?]-*sa*[?]-*li* (RASH Atab 004.B.16)

102-73-**04**-97 → *a*-*mo*[?]-***ta***[?]-*ro* (ENKO Abou 015, 021 and 045; ENKO Avas 002)

102-73-**04**-97-23 → *a*-*mo*[?]-***ta***[?]-*ro*-*ti* (KITI Ipla 001.*v*).

104-09-**04**-55-96 → *i*-*li*-***ta***[?]-*ma*[?]-*ri* (RASH Atab 004.A.10)

CM 05 → *lo*[?]

Comparative evidence: It matches LA 02/*ro*[?] and CGk *lo*.

Internal evidence: None.

Readings: It takes part in two identifications involving the ending *-o-ti*:

102-37-06-**05**-23 → *a*-*37-*pa*[?]-***lo***[?]-*ti* (RASH Atab 001.A.02-03)

71-50-**05**-<u>23</u> → *ja*[?]-*pi*[?]-***lo***[?]-<u>*ti*</u> (SYRI Psce 001)

CM 06 → *pa*[?]

Comparative evidence: It matches LA 03/*pa*[?] and CGk *pa*.

Internal evidence: None.

Readings: It participates in two identifications, of which only the first seems secure:

104-09-**06**-09 → *i*-*li*-***pa***[?]-*li* (ENKO Abou 080)

104-<u>25/102</u>-**06**-09 → *i*-<u>*(k)a*</u>[?]-***pa***[?]-*li* (RASH Atab 004.A.03)

CM 07 → *te*[??]

Comparative evidence: It is comparable only to LA 04/*te*[?].

Internal evidence: None.

Readings: None.

CM 08 → *na*$^{?}$

Comparative evidence: It matches LA 06/*na* and CGk *na*.

Internal evidence: None secure.

Readings: It participates in a single doubtful identification:

04-**08**-100 → *ta*$^{?}$-***na***$^{?}$-*ni*$^{?}$ (RASH Atab 004.A.10)

CM 09 → *li*

Comparative evidence: it corresponds to LA 60/*ri* and CGk *li*.

Internal evidence: on one hand, a scribal mistake in ENKO Abou 063 suggests that its value is somehow related CM 87 → *la*$^{??}$; on the other hand, its special interaction with signs whose hypothetical value is *j*V$^{??}$ suggests that it is C*i* syllabogram.

Readings: it participates in six identifications, of which the first four are secure and involve theophorics with the West-Semitic divine name ʾIlu:

104-**09**-04-55-96 → *i*-***li***-*ta*$^{?}$-*ma*$^{?}$-*ri* (RASH Atab 004.A.10)

104-**09**-06-**09** → *i*-***li***-*pa*$^{?}$-***li*** (ENKO Abou 080)

104-**09**-55-**09**-70 → *i*-***li***-*ma*$^{?}$-***li***-*ki*$^{?}$ (RASH Atab 004.B.14)

104-**09**-71-100 → *i*-***li***-*ja*$^{?}$-*ni*$^{?}$ (RASH Atab 004.A.09)

25-51-**09** → *ka*$^{?}$-*pi*$^{?}$-***li*** (RASH Atab 004.A.08)

38-01-04-82-**09** → *e*$^{?}$-*we*$_2$$^{??}$-*ta*$^{?}$-*sa*$^{?}$-***li*** (RASH Atab 004.B.16)

CM 10

The sign is left untransliterated. If evidence emerges in future to corroborate the possibility that it is an allograph of CM 37b/41, then it might have the same value (see below).

CM 11 → *pe*$^{??}$

Comparative evidence: It is comparable only to CGk *pe*.

Internal evidence: None.

Readings: None.

CM 12 → *po*$^{?}$

Comparative evidence: It matches LA 11/*po*$^{?}$ and CGk *po*.

Internal evidence: There is evidence supporting its *o*-vocalism, which is the same as given in the next entry.

Readings: It is involved in two identifications with the ending -*o*-*ti*:

53-09-70-**12**-23 → *ma*$^{?}$-*li*-*ki*$^{?}$-***po***$^{?}$-*ti* (ENKO Arou 001.03)

104-11-<u>24</u>-06-**12**-23 → *i*-*pe*$^{??}$-<u>*le*</u>$^{?}$-*pa*$^{?}$-***po***$^{?}$-*ti* (ENKO Arou 001.06)

CM 13/78 → *to*$^{?}$

Comparative evidence: It equates with CGk *to*, especially its early Paphian variants, and probably was modeled on LA 05/*to*$^{?}$.

Internal evidence: There is evidence supporting its *o*-vocalism, which is the same as given in the next entry.

Readings: It is involved in two identifications with the ending -*o*-*ti*:

102-109-04-**13**-23 → *a*-*109-*ta*-***to***$^{?}$-*ti* (CYPR Mvas 002; ENKO Mvas 002)

]<u>06</u>-23-**13**-23 →]*<u>pa</u>*$^{?}$-*ti*-***to***$^{?}$-*ti* (ENKO Avas 004)

CM 17 → *no*$^{?}$

Comparative evidence: It corresponds only to CGk *no*.

Internal evidence: The pair 30-70-17-23 (ENKO Atab 004.B.08) / 30-<u>70</u>-65 (ENKO Atab 004.B.19) suggests timidly that it has the same consonantal value as CM 65 → *ni*$^{??}$. The other internal datum is the same as given in the next entry.

Readings: It is involved in two identifications with the ending -*o*-*ti*:

30-70-**17**-23 → 30-*ki*$^{?}$-***no***$^{?}$-*ti* (ENKO Atab 004.B.08)

110-37-21-**17**-23 → *ke*/*u*$^{?}$-*37-*ko*$^{?}$-***no***$^{?}$-*ti* (ENKO Atab 002.B.I.25)

CM 19/79 → *u*

Comparative evidence: It corresponds to LA 10/*u* and probably to CGk *u*.

Internal evidence: It is one of the most frequent signs in sequence-initial position (94.9%) and in general. This is especially evident in CM 2.

Readings: It participates in a single identification:

19-91-73-23 → ***u***-*mi*$^{?}$-*mo*$^{?}$-*ti* (RASH Atab 004.B.14)

CM 21/15 → *ko*$^{?}$

The reading must be considered unconfirmed and is therefore provided with one question mark.

Comparative evidence: It matches only CGk *ko*.

Internal evidence: None.

Readings: It is involved in one onomastic identification at Ugarit and another at Cyprus involving the ending -*o*-*ti*:

21-82-75-51 → ***ko***$^{?}$-*sa*$^{?}$-*ra*-*pi*$^{?}$ (RASH Atab 004.B.13)

92-13-**15**-23 (CYPR Mvas 004) → *92-*to*$^{?}$-***ko***$^{?}$-*ti*.

CM 23 → *ti*

Comparative evidence: It is an exact match to LA 37/*ti* and CGk *ti*.

Internal evidence: It occurs frequently before CM 69/72 → *ja*$^{?}$ in what appear to be spellings of the type C*i*-*ja*.

Readings: It is involved in up to 24 possible identifications with the ending -*o*-*ti* (see Tables 5.17-5.19 in section 5.5) and in the identification of a personal name at Ugarit:

19-91-73-**23** → *u-mi*[?]*-mo*[?]-***ti*** (RASH Atab 004.B.14)

CM 24 → *le*[?]

Comparative evidence: It matches CGk *le* and, possibly, but much more tentatively, LA 27/*re*[??].

Internal evidence: The pairs 104-11-24-06-12-23 (ENKO Arou 001.06) and 104-11-24 (ENKO Atab 002.B.I.01) vs. 107-11-24-107-27-69-23 (ENKO Arou 001.12-13) and 107-11-87 (ENKO Atab 002.A.I.29; 002.B.I.10; 003.B.18) suggest that the sign has some connection to CM 87 → *la*[?].

Readings: None.

CM 25 → *ka*[?]

Comparative evidence: It is the intermediate form between LA 77/*ka*[??] and CGk *ka*.

Internal evidence: None.

Readings: It takes part in two identifications, of which the second is the most secure:

25-51-09 → ***ka***[?]*-pi*[?]*-li* (RASH Atab 004.A.08)

55-**25**-51-40 → *ma*[??]***-ka***[??]*-pi*[??]*-ji*[??] (RASH Atab 004.A.04)

CM 26

The sign is left untransliterated. If evidence emerges in future to corroborate the possibility that it is an allograph of CM 61, then it should have the same phonetic value (see below).

CM 27 → *si*[?]

Comparative evidence: It corresponds to CM 27/*si*[??] and CGk *si*.

Internal evidence: It occurs frequently before CM 69 → *ja*[?] and 88/89/90 → *jo*[?], in what appear to be spellings of the type C*i*-*j*V.

Readings: None secure.

CM 28 → *lu*[?]

Comparative evidence: It it the possible intermediate form between CGk *lu* and LA 26/*ru*[??].

Internal evidence: There is circumstantial evidence that it shares the consonant of CM 05 → *lo*[??] and CM 09 → *li*[??], whereas a timid connection to CM 95 → *wa*[??] seems to support the *u*-vocalism.

Readings: It participates in a single, but crucial, identification:

51-**28** → *pi*[??]***-lu***[??] (RASH Atab 004. A.01, 05-08, 10, 11; B.14, 15, 18)

CM 29 → *wo*$_2$[??]

Comparative evidence: None.

Internal evidence: Timid suggestions of an alternation with CM 35 → *wi*$_2^{??}$, whose hypothetical value is itself very fragile; some support for the vocalic value *o* based on its interaction with final CM 17 → *no*$^{??}$.
Readings: None.

CM 30
The sign is left untransliterated. If evidence emerges in future to corroborate the possibility that it is an allograph of CM 37b/41, then it might have the same value: *zi*$^{?}$ (see below).

CM 33 → *re*$^{?}$
Comparative evidence: It is comparable only to CGk *re*.
Internal evidence: It alternates twice with signs whose tentative value is *r*$^{??}$ in ENKO Atab 003.
Readings: None.

CM 34/56 → *ne*$^{??}$
Comparative evidence: It comparable to CGk *ne*, but could also be derived from LA 24/*ne*$^{??}$, especially if it is a variant of CM 02.
Internal evidence: None.
Readings: None.

CM 35 → *wi*$_2^{??}$ or ***we*$^{??}$**
Comparative evidence: It is somewhat similar to CGk *wi*.
Internal evidence: Some evidence of alternation with CM 29 in CM 2.
Readings: It participates in one very uncertain identification, for which a value *we*$_{(2)}^{??}$ would perhaps be more suitable:

38-**35**-100 → *e*$^{?}$-***wi*$_2^{??}$**-*ni*$^{?}$ (RASH Atab 004.A.07)

CM 36
The sign is left untransliterated, as no evidence regarding its value was uncovered.

CM 37 → *pu*$_2^{??}$ or ***so*$^{??}$**
Comparative evidence: On one hand, it is comparable to LA 29/*pu*$_2^{??}$, but, on the other hand, it is similar to CGk *so*.
Internal evidence: None.
Readings: None.

CM 37b/41 → *zi*$^{?}$
Comparative evidence: It is comparable to LA 49, which is untransliterated.
Internal evidence: None.

Readings: It takes part in two identifications:

37b-04-100 → ***zi***$^{?}$-*ta*$^{?}$-*ni*$^{?}$ (RASH Atab 004.A.09)

37b-71-100-40 → ***zi***$^{?}$-*ja*$^{?}$-*ni*$^{?}$-*ji*$^{?}$ (RASH Atab 004.A.09)

CM 38 → *e*$^{?}$

Comparative evidence: It compares well to LA 38/*e* and is possibly the source of CGk *e*.

Internal evidence: It is one of the most frequent signs and almost always attested in sequence-initial position (97.7%). This is especially visible in CM 2.

Readings: It participates in two dubious identifications:

38-01-04-82-09 → ***e***$^{?}$-*we*$_2$$^{??}$-*ta*$^{?}$-*sa*$^{?}$-*li* (RASH Atab 004.B.16)

38-35-100 → ***e***$^{?}$-*wi*$_2$$^{??}$-*ni*$^{?}$ (RASH Atab 004.A.07)

CM 39/49 → *mu*$^{??}$

Comparative evidence: It is most likely the predecessor of CGk *mu*.

Internal evidence: None

Readings: None.

CM 40 → *ji*$^{?}$

Comparative evidence: it is comparable to LA 47, which is untransliterated.

Internal evidence: None.

Readings: It participates in two convincing identifications:

37b-71-100-**40** → *zi*$^{?}$-*ja*$^{?}$-*ni*$^{?}$-***ji***$^{?}$ (RASH Atab 004.A.09)

55-25-51-**40** → *ma*$^{??}$-*ka*$^{??}$-*pi*$^{??}$-***ji***$^{??}$ (RASH Atab 004.A.04)

CM 44 → *se*$^{??}$

Comparative evidence: It matches both LA 09/*se*$^{?}$ and CGk *se*.

Internal evidence: None.

Readings: None.

CM 46/47 → *s/tu*$^{?}$

Comparative evidence: It matches LA 50/*du*$^{?}$ and CGk *su*.

Internal evidence: There is one piece of evidence in CM 2 pointing to an alternation of the sign with CM 27 → *si*$^{?}$, but an affinity with the consonant of CM 04 → *ta*$^{?}$ is not impossible.

Readings: None.

CM 50/51 → *pi*$^{?}$

The value is deemed unconfirmed and provided with one question mark only to maintain the "quantitative" methodology established in this thesis, as no internal evidence for it has been uncovered. The fact is that the multiple identifications in RASH

Atab 004 show how compelling it is. The use of the sign in the tablet even supplies some clues concerning the sound underlying the CM $p^?$ series: as the Ugaritic /b/ series seems to be represented not just with $pi^?$, but also with $wi^?$ in two occasions, it is possible that CM $p^?$ was not a close match for it. Perhaps $p^?$ represents the voiceless bilabial /p/ and so on occasion $w^?$ (a voiced labial fricative?) is preferred in order to convey the feature [+VOICE].

Comparative evidence: It is the intermediate form between LA 39/*pi* and CGk *pi*.

Internal evidence: None.

Readings: It participates in at least six identifications:

21-82-75-**51** → *ko*$^?$-*sa*$^?$-*ra*-***pi***$^?$ (RASH Atab 004.B.13)

25-**51**-09 → *ka*$^?$-***pi***$^?$-*li* (RASH Atab 004.A.08)

51-28 → ***pi***$^{??}$-*lu*$^{??}$ (RASH Atab 004. A.01, 05-08, 10, 11; B.14, 15, 18)

55-25-**51**-40 → *ma*$^{??}$-*ka*$^{??}$-***pi***$^{??}$-*ji*$^{??}$ (RASH Atab 004.A.04)

102-74-82-**51** → *a*-*wi*$^?$-*sa*$^?$-***pi***$^?$ (RASH Atab 004.A.02)

102-74-75-**51** → *a*-*wi*$^?$-*ra*-***pi***$^?$ (RASH Atab 004.B.17)

CM 52

The sign is left untransliterated, as no evidence regarding its value was uncovered. However, I would not preclude the possibility that it is an allograph of CM 59.

CM 53/54/55 → *ma*$^?$

As with CM 50/51 → $pi^?$, the reading is unconfirmed and provided with one question mark in order to maintain a regularity of the methodology followed in this thesis. The identifications in RASH Atab 004 suggest strongly that the reading is correct. However, as no internal evidence for its consonantal value has been unveiled, except for one uncertain instance of interchanging with CM 95 → $wa^?$, it may be the case that the phoneme it represents is not exactly the same as Ugaritic /m/, which is only what it transcribes in RASH Atab 004.

Comparative evidence: It is comparable to LA 80/*ma* and the possible predecessor of CGk *wa*, CGk *ma*, or both.

Internal evidence: None.

Readings: It participates in at least four identifications:

55-25-51-40 → ***ma***$^{??}$-*ka*$^{??}$-*pi*$^{??}$-*ji*$^{??}$ (RASH Atab 004.A.04)

55-70 → ***ma***$^{??}$-*ki*$^{??}$ (RASH Atab 004.B.15, 18)

104-09-04-**55**-96 → *i*-*li*-*ta*$^?$-***ma***$^?$-*ri* (RASH Atab 004.A.10)

104-09-**55**-09-70 → *i*-*li*-***ma***$^?$-*li*-*ki*$^?$ (RASH Atab 004.B.14)

CM 59 → *zo*$^{??}$

Comparative evidence: It matches CGk *zo*.

Internal evidence: None.

Readings: None secure, but cf. the sign's possible involvement in a sequence with the *-o-ti* ending:

110-23-**59**(-21)-23 → *ke*/*u*[??]-*ti*[?]-***zo***[??](-*ko*[?])-*ti*[?]

CM 60

The sign is left untransliterated, as no evidence regarding its value was uncovered. Is it an allograph of CM 91 → *mi*[?]?

CM 61 → *tu*[??] or *pu*[??]

Comparative evidence: On one hand, it is the possible intermediate form between LA 69/*tu*[?] and CGk *te*; on the other hand, it could be the predecessor of CGk *pu.*

Internal evidence: There is circumstantial evidence that it participates with CM 95 → *wa*[?] in strings of the type C*u-wa*.

Readings: None.

CM 62 → (C)*o*[??]

Comparative evidence: None. However, it could be the CM 2 equivalent of CM 64 → *o*[?].

Internal evidence: There is some evidence that it alternates with CM 15/21 → *ko*[?]. It is very common in word initial position (55%).

Readings: None.

CM 64 → *o*[?]

Comparative evidence: It corresponds only to CGk *o*.

Internal evidence: It is not very frequent in general, but it is initial most of the time (87.5%).

Readings: None, except for a dubious sign-group possibly containing the *-o-ti* ending:

]27-73-64-23 → *si*[?]-*mo*[??]-*o*[?]-*ti* (ENKO Avas 003)

CM 65+67+99/100 → *ni*[?]

Comparative evidence: CM 67 is comparable to LA 30/*ni*[?] and could represent the same grapheme as CM 65 and 99/100.

Internal evidence: CM 65, 99 and 100 occur in complementary distribution. CM 65, 67 and 100 are never initial. The dstribution of CM 65 in CM 2 is inconsistent with a V syllabogram.

Readings: CM 100 participates in at least six identifications, of which two are very compelling:

04-08-**100** → *ta*[?]-*na*[?]-***ni***[?] (RASH Atab 004.A.10)

04-71-**100** → *ta*[?]-*ja*[?]-***ni***[?] (RASH Atab 004.A.05)

37b-04-**100** → *zi*[?]-*ta*[?]-***ni***[?] (RASH Atab 004.A.09)

37b-71-**100**-40 → *zi*[?]-*ja*[?]-***ni***[?]-*ji*[?] (RASH Atab 004.A.09)

102-02-**100** → *a-ne*[?]-***ni***[?] (RASH Atab 004.B.16)
104-09-71-**100** → *i-li-ja*[?]-***ni***[?] (RASH Atab 004.A.09)

CM 68 → *nu*[??]
Comparative evidence: It matches LA 55/*nu*[??] but has no counterpart in Cypro-Greek.
Internal evidence: It is attested only in CM 2 and possibly PYLA Psce 001. It also has a counterpart in ENKO Atab.
Readings: None.

CM 69/71/72 → *ja*[?]
The reading is unconfirmed and provided with one question mark. I consider the three forms together for the reasons explicated in the following entries.
Comparative evidence: CM 69 could be the intermediate form between LA 57/*ja* and CGk *ja*. CM 72 is even more similar to LA 57/*ja* and could be a conservative variant of CM 69, but the latter form appears already in ENKO Atab 001. The source of CM 71 is unclear, but it could be a modification of CM 69.
Internal evidence: CM 69 and 72 (but not CM 72b, i.e. the form 72 as attested in CM 2) are frequently preceded by signs bearing C*i* values. They also occur in complementary distribution with CM 71.
Readings: CM 71 is involved in at least three identifications, two of which are secure:
04-**71**-100 → *ta*[?]-***ja***[?]-*ni*[?] (RASH Atab 004.A.05)
37b-**71**-100-40 → *zi*[?]-***ja***[?]-*ni*[?]-*ji*[?] (RASH Atab 004.A.09)
104-09-**71**-100 → *i-li-***ja***[?]-*ni*[?] (RASH Atab 004.A.09)

CM 70 → *ki*[?]
Comparative evidence: It is the intermediate form between LA 67/*ki*[?] and CGk *ki*.
Internal evidence: None.
Readings: It is involved in two identifications:
55-**70** → *ma*[??]-***ki***[??] (RASH Atab 004.B.15, 18)
104-09-55-09-**70** → *i-li-ma*[?]-*li-***ki***[?] (RASH Atab 004.B.14)

CM 72b → *pa*$_2$[??]
Comparative evidence: It is comparable to LA 56/*pa*$_3$[??] and LA 57/*ja*, but see the following entry.
Internal evidence: Evidence from distribution shows that this is almost certainly different from CM 69/72. Only attested six times in CM 2.
Readings: None.

CM 73 → *mo*[?]
Comparative evidence: It is the likely predecessor of CGk *mo*.
Internal evidence: None.

Readings: It is involved in two identifications:

19-91-**73**-23 → *u-mi*[?]-***mo***[?]-*ti* (RASH Atab 004.B.14)

102-**73**-04-97 → *a-**mo***[?]-*ta*[?]-*ro* (ENKO Abou 015, 021 and 045; and Avas 002)

102-**73**-04-97-23 → *a-**mo***[?]-*ta*[?]-*ro-ti* (KITI Ipla 001.*v*)

CM 74 → *wi*[?]

Comparative evidence: It is comparable only to LA 40/*wi*[??].

Internal evidence: None.

Readings: It is involved in two identifications:

102-**74**-82-51 → *a-**wi***[?]-*sa*[?]-*pi*[?] (RASH Atab 004.A.02)

102-**74**-75-51 → *a-**wi***[?]-*ra*[?]-*pi*[?] (RASH Atab 004.B.17)

CM 75 → *ra*

Comparative evidence: It is the predecessor of CGk *ra*.

Internal evidence: It alternates with CM 33 → *re*[?], CM 96 → *ri*[?] and CM 97 → *ro* in ENKO Atab 003.

Readings: It is involved in two identifications:

21-82-**75**-51 → *ko*[?]-*sa*[?]-***ra***-*pi*[?] (RASH Atab 004.B.13)

102-**74**-75-51 → *a-**wi***[?]-*ra*[?]-*pi*[?] (RASH Atab 004.B.17)

CM 76

The sign is left untransliterated, as no evidence regarding its value was uncovered. Is it the CM 2 version of CM 73 → *mo*[?]?

CM 80

The sign is left untransliterated.

Comparative evidence: It could be a modification of CM 79 → *u*.

Internal evidence: It is peculiar to CM 2.

Readings: None.

CM 81

The sign is left untransliterated.

Comparative evidence: None.

Internal evidence: It is always found in initial position, but in general it is very rare.

Readings: None.

CM 82 → *sa*[?]

Comparative evidence: It is the intermediate form between LA 31/*sa*[??] and CGk *sa*.

Internal evidence: None.

Readings: It is involved in three identifications:

21-**82**-75-51 → *ko*[?]-***sa***[?]-*ra-pi*[?] (RASH Atab 004.B.13)

38-01-04-**82**-09 → *e*[?]*-we*$_2$[??]*-ta*[?]*-**sa***[?]*-li* (RASH Atab 004.B.16)
102-74-**82**-51 → *a-wi*[?]*-**sa***[?]*-pi*[?] (RASH Atab 004.A.02)

CM 85/96/114 → *ri*

Comparative evidence: CM 85/114 is the likely predecessor of CGk *ri*. In "CM 1" it is clear that CM 85 and 96 are allographs of the same sign.
Internal evidence: CM 96 alternates twice with CM 33 → *re*[?], and once with CM 75 → *ra*[?] and CM 97 → *ro* in ENKO Atab 003. Together with other likely C*i* signs, it often precedes CM 88/89/90 → *jo*, implying strings of the type C*i-j*V.
Readings: It is involved in a single identification:

104-09-04-55-**96** → *i-li-ta*[?]*-ma*[?]***-ri*** (RASH Atab 004.A.10)

CM 86

The sign is left untransliterated, as no solid evidence regarding its value was exposed.

CM 87 → *la*[?]

Comparative evidence: It is the intermediate form between LA 60/*ra*[?] and CGk *la*.
Internal evidence: It is corrected to CM 09 → *li* in ENKO Abou 063. The pairs 104-11-**24**-06-12-23 (ENKO Arou 001.06) and 104-11-**24** (ENKO Atab 002.B.I.01) vs. 107-11-**24**-107-27-69-23 (ENKO Arou 001.12-13) and 107-11-**87** (ENKO Atab 002.A.I.29; 002.B.I.10; 003.B.18) suggest that the sign has some connection to CM 24 → *le*[?]. Both clues point to a *l*V[?] value.
Readings: It is involved in a problematic identification:

102-25-**87**-51 → *a-ka*[?]*-**la***[?]*-pi*[?] (RASH Atab 004.B.15)

CM 88/89/90 → *jo*

Comparative evidence: The paleographical match between the three forms is compelling and they represent the intermediate form between LA 65/*ju*[?] and CGk *jo*.
Internal evidence: The sign is frequently preceded by signs bearing C*i*[?] values (including CM 85/96/114 → *ri*), implying strings of the type C*i-j*V. See also the evidence from readings for a special interaction with CM 23 that supports a C*o* value.
Readings: It is involved in three identifications of sequences with the ending *-o-ti*:

27-69-09-**88**-23 → *si*[?]*-ja*[?]*-li-**jo**-ti* (CYPR Mvas 003)
82-06-82-**88**-23 → *sa*[?]*-pa*[?]*-sa*[?]***-jo**-ti* (PPAP Mvas 001)
82-96-**88**-23 → *sa*[?]*-ri-**jo**-ti* (ENKO Arou 001.02, 09, 26)

CM 91 → *mi*[?]

Comparative evidence: It is the obvious predecessor of CGk *mi*.
Internal evidence: None secure. It so far has no obvious equivalent in CM 2. Could this be the same grapheme as CM 60?
Readings: It is involved in one identification:

19-**91**-73-23 → *u-**mi***$^{?}$*-mo*$^{?}$*-ti* (RASH Atab 004.B.14)

CM 92 → *zi*$_2$$^{??}$

Comparative evidence: None.

Internal evidence: The sign is very rare, but slightly more common at Ugarit. This could point to its underlying consonant being rare in the language of Cypro-Minoan but common in Ugaritic, Hurrian, or both:

Readings: It could be involved in what is a very fragile identification: does 92-28-95-100 → *92-*lu*$^{?}$*-wa*$^{?}$*-ni*$^{??}$ (RASH Atab 004.A.11) correspond to *Ziluwan*, a personal name attested at Alalaḫ?

CM 95 → *wa*$^{?}$

Comparative evidence: It is evidently derived from LA 54/*wa*.

Internal evidence: It seems to be preceded by C*u* signs a significant number of times.

Readings: None secure, but see previous sign.

CM 97 → *ro*

Comparative evidence: It is the obvious predecessor of CGk *ro*.

Internal evidence: Alternates with CM 33 → *re*$^{?}$, CM 75 → *ra*$^{?}$ and CM 96 → *ri* in ENKO Atab 003. See also the evidence from readings for a special interaction with CM 23 that supports a C*o* value.

Readings: It is involved in five identifications, four of them instances of the *-o-ti* ending:

27-13-110-**97**-23 → *si*$^{?}$*-na*$^{??}$*-ke*/*u*$^{??}$*-**ro**-ti* (ENKO Arou 001.04-05; KOUR Psce 001)

44-27-**97**-23 → *se*$^{??}$*-si*$^{?}$*-**ro**-ti* (MARO Avas 001)

102-73-04-**97** → *a-mo*$^{?}$*-ta*$^{?}$*-**ro*** (ENKO Abou 015, 021 and 045; ENKO Avas 002)

102-73-04-**97**-23 → *a-mo*$^{?}$*-ta*$^{?}$*-**ro**-ti* (KITI Ipla 001.*v*).

(102-)82-85-88-**97**-23 → (*a*-)*sa*$^{?}$*-ri-jo-**ro**-ti* (ENKO Avas 005)

CM 98 → *qa*$^{??}$

Comparative evidence: It is comparable only to LA 16/*qa*$^{?}$ and has no obvious counterpart in Cypro-Greek.

Internal evidence: It is very rare and absent from CM 2.

Readings: None.

CM 102/101 → *a*

Comparative evidence: It corresponds to LA 08/*a* and CGk *a*.

Internal evidence: It is one of the most frequent signs and the most frequent in sequence-initial position (98.8%). This is especially visible in CM 2.

Readings: It participates in the following identifications (of which the first two are much more uncertain):

102-02-100 → ***a*-*ne*$^{?}$-*ni*$^{?}$** (RASH Atab 004.B.16)

102-25-87-51 → ***a*-*ka*$^{?}$-*la*$^{?}$-*pi*$^{?}$** (RASH Atab 004.B.15)

102-73-04-97 → ***a*-*mo*$^{?}$-*ta*$^{?}$-*ro*** (ENKO Abou 015, 021 and 045; ENKO Avas 002)

102-73-04-97-23 → ***a*-*mo*$^{?}$-*ta*$^{?}$-*ro*-*ti*** (KITI Ipla 001.*v*).

102-74-82-51 → ***a*-*wi*$^{?}$-*sa*$^{?}$-*pi*$^{?}$** (RASH Atab 004.A.02)

102-74-75-51 → ***a*-*wi*$^{?}$-*ra*$^{?}$-*pi*$^{?}$** (RASH Atab 004.B.17)

CM 103

The sign is left untransliterated, as no solid evidence regarding its value was uncovered.

CM 104 → *i*

Comparative evidence: It corresponds to LA 28/*i* and CGk *i*.

Internal evidence: It is one of the most frequent signs in sequence-initial position (89.4%) and in general. This is particularly clear in CM 2.

Readings: It participates in four compelling identifications:

104-09-04-55-96 → ***i*-*li*-*ta*$^{?}$-*ma*$^{?}$-*ri*** (RASH Atab 004.A.10)

104-09-06-09 → ***i*-*li*-*pa*$^{?}$-*li*** (ENKO Abou 080)

104-09-55-09-70 → ***i*-*li*-*ma*$^{?}$-*li*-*ki*$^{?}$** (RASH Atab 004.B.14)

104-09-71-100 → ***i*-*li*-*ja*$^{?}$-*ni*$^{?}$** (RASH Atab 004.A.09)

CM 105

The sign is left untransliterated, as no evidence regarding its value was uncovered. However, the fact that it is so far attested only at Ugarit may suggest it represents a syllable relatively marginal in the language(s) of Cypro-Minoan in Cyprus, but normal in Ugaritic, Hurrian, or both.

CM 107 → *za*$_2$ $^{??}$

Comparative evidence: It is probably the predecessor of CGk *za* (CGk *ma* is much less likely).

Internal evidence: Its frequency in CM 2 is mostly comparable to that of signs with the values C*a*$^{?}$ and C*i*$^{?}$ (cf. Figure 4.1).

Readings: None.

CM 110 → *ke*/*u*$^{??}$

Comparative evidence: It is the intermediate form between LA 44/*ke*$^{??}$ and CGk *ku*.

Internal evidence: None.

Readings: None.

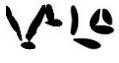
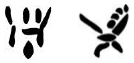
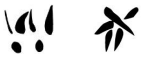
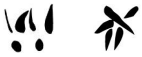
CM 112 → *z/ke*$^{??}$

The reading is very doubtful and is therefore provided with two question marks.
Comparative evidence: It is the intermediate form between LA 74/*ze*$^{??}$ and CGk *ke*.
Internal evidence: The sign is very rare.
Readings: None.

In conclusion, nine Cypro-Minoan signs have phonetic values supported by the three main procedures applied in this thesis: CM 09 → *li*; 19/79 → *u*; 23 → *ti*; 75 → *ra*; 85/96/114 → *ri*; 88/89/90 → *jo*; 97 → *ro*; CM 102 → *a*; and CM 104 → *i*. 29 other signs are supported by only two of the three analytical methods and must therefore be deemed unconfirmed. However, in this last group I would highlight three syllabograms that have produced a significant number of compelling identifications, especially in RASH Atab 004: CM 50/51 → *pi*$^{?}$, CM 53/54/55 → *ma*$^{?}$ and CM 99/100 → *ni*$^{?}$. Finally, 22 signs have dubious values and 10 have been left untransliterated. These two groups include forms that may or may not represent variants other signs. Notice that the total amount of signs considered here is 70, which, according to the analysis of the signary in Chapter 2, is the maximum possible number of individual signs employed by the Cypro-Minoan inscriptions (see 2.3.24).

Table 5.27 contains a grid with this thesis' final proposals for reading the Cypro-Minoan signs. This is intended as a working grid for future research on the script.

Table 5.27: Grid of phonetic values after their testing.

	A	E	I	O	U
	102/101	 38[?]	 104	 64[?]	 19/79
J	 69/71/72[?]		 40[?]	 88-90	
K	 25[??]	 110[??] 112[??]	 70[?]	 21/15[?]	 110[??]
L	 87[?]	 24[?]	 09	 05[?]	 28[?]
M	 53-55[?] 109[??]	 35[??]	91[?]	 73[?]	 39/49[??]
N	 08[?]	 02[??] 34/56[??]	 65/67/99-100[?]	 17[?]	 68[??]
P	 06[?]	 11[??]	 50/51[?]	12[?]	 37[??] 61[??]
R	 75	 33[?]	 85/96/114	 97	
S	 82[?]	 44[??]	 27[?]	 37[??]	 46/47[?]
T	 04[?]	 07[??]	 23	 13/78[?]	 46/47[?] 61[??]
W	 95[?]	 35[??]	 74[?]		
W_2	 53-55[??] 109[??]	 01[??]	 35[??]	29[??]	
Z		 112[??]	 37b/41[?]		 (CM0 17[??])
Z_2	 107[??]			 59[??]	
PA_2	 72b[??]	**PU_2**	 37[??]	**QA**	 98[??]

CONCLUSIONS

THE SIGNS OF CYPRO-MINOAN

In Chapter 2 it was demonstrated that the traditional presentation of the Cypro-Minoan signary as maintained by Olivier contains many arbitrary identifications of signs. This owes to three factors. First, the signary has been framed in the also traditional division of Cypro-Minoan into three supposedly different scripts, CM 1, 2 and 3, which is itself based on inconsistent criteria and unproven assumptions. The ascription of one or another inscription to one of these artificial subscripts has led to circular arguments that certain pairs of sign forms correspond to distinct graphemes, not variants of a single sign, because they are attested in inscriptions assigned to different subscripts. Secondly, the inventorying was not founded on, nor accompanied by, an examination of the paleographical variation of each sign, with illustrations of the signs as they appear on the inscriptions and considering factors like geographical distribution, chronology, epigraphical support, etc. As a side effect, some sign forms remain separated where others in similar conditions have been assimilated.

The approach in this thesis has been different and has led to different results. Despite being for the most part a reappraisal of the existing sign-list, my study has attempted to be as neutral as possible and has not framed the signs in any artificial subdivision. Instead, an effort was made to progress from the "known" to the "unknown". Using a method that proved fruitful with Carian, a writing system that presented similar problems of decipherment, as a starting point I have selected four homogeneous sets of documents, two corresponding to single inscriptions and two comprising groups of texts, instead of the artificial CM 1-3. The most important role was played by the tablets ENKO Atab 002-004, the traditional "CM 2", as they represent the largest sample and employ a very standardized script. The other three sets consisted of two long and complete documents, the cylinder ENKO Arou 001 and the tablet RASH Atab 004, alongside the clay balls from Enkomi. The latter group actually consists of multiple short texts displaying a significant paleographical, but they are confined to a specific period and epigraphical support, and are almost exclusive to Enkomi. We can only expect the same script to occur on all the balls.

As soon as we quantify the number of individual signs contained in these inscriptions, it is clear that none is even close to have used the 96 syllabograms theorized by Olivier. The largest set, between 57 and 59 signs, occurs in the CM 2 tablets. As this is also the largest sample, this number must approximate closely the total amount of signs of the script in the CM 2 documents are written. It should be abundantly clear by now that the 72 syllabograms of CM 1 and the 96 syllabograms of CM 1-2-3, counted by Olivier, can only be achieved if one mixes many different forms, many of them rare or hapax, from various short inscriptions. The majority of these are

likely to represent mere sign variants and not independent graphemes. Counting them at the same level as well-established signs from the homogeneous subcorpora selected here inevitably inflates the signary of Cypro-Minoan and generates a misleading picture of the script or scripts used in the inscriptions. A wiser approach is to remain cautious about the identity of these rarer forms and attempt to understand them only in the light of the better understood inscriptions.

The reappraisal in this thesis suggests that the Cypro-Minoan inscriptions used a signary, or variants thereof, containing between 57 and 70 signs (see 2.3.24). This number agrees well with a syllabary that is expected to have abandoned some of the more complex signs of Linear A and Linear B (ca. 90 syllabograms) and provided the template for the simpler Cypro-Greek syllabary (ca. 55 syllabograms).

The question whether Cypro-Minoan inscriptions comprise one or multiple writing systems must remain open until a definitive decipherment is achieved, but I would emphasize that nothing in the available evidence forces the multiple-script theory. It is true that CM 2 features some peculiar sign forms. Yet, for once, these are not sixteen or seventeen as previously claimed, but rather seven (CM 29, 30, 52, 62, 65, 76 and 80). In addition, cases like Carian and Cypro-Greek, in which regional varieties of a single writing system employ small numbers of idiosyncratic signs, warns us not to take graphic differences as being automatically synonymous with structural differences. It has often been overlooked that signs CM 74 and 95 occur in CM 2 and at Ugarit ("CM 3"), but are not attested elsewhere on Cyprus ("CM 1"). Under the traditional framework, does this mean that CM 2 and CM 3 invented them independently? Most likely, their absence from the remaining inscriptions is accidental or due to other factors, rather than being indicative of structural differences.

This new way of looking at Cypro-Minoan has consequences for its decipherment. For example, using the signary as presented by É. Masson (1974), it had been theorized that CM 39 (𐄁) was the predecessor of CGk *mu* (𐠊) and CM 49 (𐄕) the model of CGk *pi* (𐠏). At the same time É. Masson proposed CM 51 (𐄗) to be *p*/*bi*. With such contradicting views, the recent scholarship has naturally been skeptical or agnostic with regard to the attempts of reading Cypro-Minoan. It has now been demonstrated that certain variants of CM 39 (𐄁) and 49 (𐄕) are identical, and that therefore they represent the same grapheme. 𐄂, 𐄃, etc. are late variants of this grapheme found on the clay balls and they do suggest that we are before the predecessor of CGk *mu* (𐠊). At the same time, a fuller survey of the paleographical variation of CM 50/51 as shown that towards the end of Cypro-Minoan, 𐄘, the form that inspired É. Masson's standardized 𐄗, had actually shifted to 𐄙 and 𐄚. This is last variant is quite close to CGk *pi* (𐠏), which substantiates É. Masson's original idea that the sign's value was *p*/*bi* (or similar). It should come as no surprise that a signary constructed through a more careful paleographical treatment leads to clearer and more systematic links with the later Cypro-Greek syllabary.

As regards the results of the analyses undertaken in Chapters 3 through 5, there is not much to add to the synthesis at the end of Chapter 5. The reassessment of the signary and the paleographical study that accompanies it in Chapter 2 have portrayed a Cypro-Minoan script that is structurally and typologically closer to what we might expect from a writing system that was modeled on a Linear A template and, centuries later, provided the basis for the Cypriot Greek. In the same vein, the phonetic values proposed for 60 sign *forms* (out of 56-70 possible Cypro-Minoan *graphemes*) sketch a syllabary that makes sense as a derivative of Linear A, but still features enough rearrangements as to account for the substantial differences between that the later Cypro-Greek syllabary shows with regard to Linear B (e.g. the use of two liquid series and the tripartite stop series that only distinguishes point of articulation).

Beyond this, time will tell about the future of the system outline in the final working grid in Table 5.27. I can only underline the methodological soundness of the readings, especially the less dubious ones, and insist that every effort was made to avoid the factors of chance and arbitrariness. An example drawn from É. Masson's 1974 attempted decipherment of RASH Atab 004 will serve to prove this point. Masson read the sequence 104-09-55-09-70 not as *i-li-ma-li-ki*, but as *i-li-ša-li-mi*. In other words, she assigned to CM 09 and 104 the same values proposed here (*li* and *i*), but different ones to CM 55 (*ša*) and 70 (*mi*). The divergent results of the two systems with the sequences that contain CM 55 and 70 and have been subjected to interpretation are shown in Table II 1.

Table II 1: Comparison between the sign values proposed in this thesis and those of É. Masson (1974).[1195]

Reading in this thesis[1196]	**Interpretation (Parallels)**	**É. Masson's reading**	**Interpretation (Parallels)**
i-li-ta$^{?}$*-ma*$^{?}$*-ri*	/ʾIlīθtamar/ (*ilttmr*)	*i-li-da-**ša**-ru*	None
*i-li-**ma**$^{?}$-li-**ki**$^{?}$*	/ʾIlīmalik/ (*ilmlk*; Alalaḫ DINGIR-*ma-lik*)	*i-li-**ša**-li-**mi***	/ʾIlīšalim/ (*ilšlm* = DINGIR-*ša-lim*[1197])
ma$^{?}$*-ka*$^{?}$*-pi*$^{?}$*-ji*$^{?}$	/Maʿqabīji/ (*mʿqby*)	***ša**-h*^{x}*-bi-yi*	None
ma$^{?}$*- **ki***$^{?}$	/malki/ '(of the) king' (*mlk* = *ma-al-ku*)	***ša-mi***	*šm* MPN (etymology and vocalism uncertain)[1198]

The values proposed here thus yield two personal names and one toponymic adjective well attested at Ugarit, while at the same time supplying a reading for 55-70 that makes its repetition less surprising: it is the word 'king', not a name. Conversely, for the first

[1195] É. Masson (1974: 46).
[1196] In this case, all sign values coincide with the ones advanced in Nahm (1981).
[1197] Cf. *DULAT*: 65.
[1198] Cf. *DULAT*: 822.

three words, the values of É. Masson yield only one feasible personal name, ʔIlīšalim, and fail to reveal any known toponymic adjective. The sequence 55-70 would read as *ša-mi*, which reminds one personal name from the Ugaritic documentation, *šm*, but the vocalism of the latter is uncertain. Thus, the idea that any random assignation of sign values might lead to a number of reasonable identifications similar to that generated by our system is demonstrably false.

It should be abundantly clear by now that the majority of the sign comparisons and sign values defended in this thesis have already been suggested in various past works. The proposals that are genuinely new are very few: CM 37b/41 → *zi*[?]; 74 → *wi*[?]; 88/89/90 → *jo*; 98 → *qa*[??]; 112 → *z/ke*[??]. No claim to the contrary has been made. Crucially, of the 50 sign values that I offer here with different degrees of certainty, 41 are already found in the two studies of Nahm (1981 and 1984) and four others coincide partially (e.g. Nahm also reads CM 91 as *mi*, but thinks that its counterpart in CM 2 is sign CM 89/90). The full list can be surmised from Appendix D. 30 of the 37 readings proposed recently by Facchetti, Negri and Notti (again, with different degrees of certainty)[1199] also coincide with the ones presented here, but all of them are found already in Nahm's system.

Nevertheless, I would insist on the fact that the set of values proposed here is the product of an analysis that is sequential, extensive (and extensively presented), accompanied by paleographical groundwork and balanced by contextual, typological and linguistic concerns. The goal has been to offer a solution imposed by the evidence, not the other way around. If not wholly new, what is presented here at least provides tangible support, and adds to, an existing scheme.

THE LANGUAGE(S) OF CYPRO-MINOAN

As most of the sequences interpreted in this thesis occur in the tablet RASH Atab 004 and have been recognized from cuneiform sources, little information has been achieved as regards the language or languages written with Cypro-Minoan in Cyprus. The comparison of the clay balls with other clay documents and portable objects currently fitted classed as "CM 1", however, reveals one evident grammatical feature, namely the opposition *-ø* or *-o* (nominative?) / *-o-ti* (genitive?). The pattern, whose symptoms have long been detected by students of the inscriptions, has a direct counterpart in the Eteocypriot language of the following millennium. The readings of signs such as 𐠎 → *no*[?], 𐠚 → *to*[?], 𐠟 → *po*[?], 𐠬 → *ro*[?], and especially 𐠫→ *jo*, which is wholly new, are therefore a source of relief.

Throughout Chapter 4, signs have also emerged that the language concealed the tablets ENKO Atab 002-004 (CM 2) and that of the remaining documents from Cyprus

[1199] Facchetti *et al*. (2013: 65).

may actually share some features. Although the number of sequences with final *-o-ti* is strangely low in CM 2 (only 110-78-23 → *ke*/*u*[??]*-to*[?]*-ti*, 30-70-17-23→ 30-*ki*[?]*-no-ti* and 110-37-21-17-23 → *ke*/*u*[??]-37-*ko*[?]*-no*[?]*-ti*), we find the repetition of initial 38-87(-87-) → *e*[?]*-la*[?](*-la*[?]-) and the opposition 104-11-24(-) → *i*[?]*-pe*[??]*-le*[?](-) vs. 107-11-24/87(-) → *za*$_2$[??]*-pe*[??]*-le*/*a*[?](-) on both "sides". If in the future more and better evidence of a connection between the language of CM 2 and that of other Cypriot documents emerge, it would prove even more difficult to think of the former as a wholly different writing system.

THE OTHER MATERIAL

Indeed, the huge body of textual material that is CM 2 deserves being transliterated in full.[1200] At this point, unfortunately, it is probable that the exercise would at best reveal onomastic or contact words recognizable from external sources. The majority, however, should comprise lexical and grammatical material difficult to penetrate in the absence of any contextual information, as the language is unknown. Here, I supply a provisional transliteration of the side A of ENKO Atab 003 as an example (Table II 2).

For instance, the sequence 25-09-49-28-95 → *ka*[??]*-li*[?]*-mu*[??]*-lu*[?]*-wa*[??] is repeated twice in the first half of ENKO Atab 003.A and therefore must be linked to the subject of the text, but we have no way of knowing its meaning. We have seen that 68-25-97-17 (ENKO Atab 003.A.15) → *nu*[??]*-ka*[??]*-ro*[?]*-no*[?], a sign-group from the same tablet, is possibly related to four sequences from ENKO Atab 004 which in transliteration display a shared nucleus *nu*[??]*-ka*[??]*-r*[?]- (4.2.2.3.11) but this tells us nothing about its semantics. We might even find words that bear *resemblance* to well-known items of the Indo-European vocabulary, as in the case of 78-25-04-75 → *to*[?]*-ka*[?]*-ta*[?]*-ra* (ENKO Atab 002.B.I.10), in comparison with LB *tu-ka-te-re* 'daughter (dat.)', Homeric Greek θύγατρα 'id. (acc.)', Sanskrit *duhitáram* 'id. (acc.)' or Avestan *dugədrąm* 'daughters (gen.)', but as we lack any kind of clues regarding the semantics of the words in these texts, the procedure would be unfruitful, even misleading. The analysis of these texts must therefore proceed with extreme caution.

[1200] Cf. already the attempts by Nahm (1984).

Table II 2: Transliteration of ENKO Abou 003.A.

A.01	*i*-60-*re*$^{?}$ | *le*$^{?}$-*ki*$^{?}$ | 52-30-*ko*$^{?}$ | *ne*$^{??}$-••[
A.02	*a-ra-ma*$^{?}$ | *a-wo*$_2$$^{??}$-*no*$^{?}$-*no*$^{?}$ | *la*$^{?}$-*jo-se*$^{??}$-••[
A.03	*u*-37-*sa*$^{?}$-*ro* | *ka*$^{?}$-*li-mu*$^{??}$-*lu*$^{?}$-*wa*$^{?}$ | *ki*$^{?}$-*nu*$^{??}$-*ki*$^{?}$-*to*$^{?}$[
A.04	*a-ra* | *pa*$^{?}$-*mu*$^{??}$-*re*$^{?}$-*wi*$_2$$^{??}$-*ma*$^{?}$ | 30-*ko*$^{?}$-*lo*$^{?}$-*ra-ni*$^{?}$][
A.05	*a-lu*$^{?}$-*ma*$^{?}$ | *e*$^{?}$-*re*$^{?}$-*pi*$^{?}$ | *e*$^{?}$-*re*$^{?}$ | *ta*$^{?}$-*ka*$^{?}$-*pi*$^{?}$-*na*$^{?}$ | *no*$^{?}$[
A.06	••-*wi*$^{?}$-*la*$^{?}$ | *i-ti* | *u*-52-*ni*$^{?}$-*ra* | *ko*$^{?}$-*wi*$_2$$^{??}$ | 30-*ko*$^{?}$-*ri*-••[
A.07	[••]-*li-si*$^{?}$-*ja*$^{?}$ | *a-ta*$^{?}$-*ra* | 62-10-*pi*$^{?}$-*na*$^{?}$ | *e*$^{?}$-*ro-ri*-••[
A.08	[••-••] | 52-30-62-*na*$^{?}$ | *e*$^{?}$-*re*$^{?}$-*pi*$^{?}$ | *ta*$^{?}$-*ka*$^{?}$ | 62-*ri-ja*$^{?}$-*sa*$^{?}$[
A.09	••-*ro-ro* | *u-ne*$^{??}$-*mu*$^{??}$-*ma*$^{?}$ | *ko*$^{?}$-*ri-ja*$^{?}$-*ni*$^{?}$ | *ti*-37-*si*$^{?}$[
A.10	*a-ra* | *ka*$^{?}$-*li-mu*$^{??}$-*lu*$^{?}$-*wa*$^{?}$ | *ke/u*$^{?}$-60 | *lu*$^{?}$-*ko*$^{?}$-*no*$^{?}$ | 62-*lo*$^{?}$-60-*ma*$^{?}$[
A.11	72-*ma*$^{?}$ | *e*$^{?}$-*re*$^{?}$-*pi*$^{?}$ | *ke/u*$^{?}$-*to*$^{?}$-*na*$^{?}$ | *a-ra-ta*$^{?}$ | *s/tu*$^{?}$-*ri-si*$^{?}$-*ja*$^{?}$
A.12	*ti*-62-*no*$^{?}$ | *la*$^{?}$-*pi*$^{?}$-*li-sa*$^{?}$ | *ne*$^{??}$-*li* | *a-ra-ma*$^{?}$ | *ta*$^{?}$-*ka*$^{?}$-*wi*$^{?}$-*ma*$^{?}$
A.13	*la*$^{?}$-*ne*$^{??}$ | *ka*$^{?}$-*la*$^{?}$-*zo*$^{??}$-*jo* | *u-ne*$^{??}$ | *s/tu*$^{?}$-*no*$^{?}$-*ro-no*$^{?}$| *ka*$^{?}$-*si*$^{?}$-*ja*$^{?}$-*li-ja*$^{?}$
A.14	*ta*$^{?}$-*ka*$^{?}$-*wi*$^{?}$-*wa*$^{?}$ | *sa*$^{?}$-*la*$^{?}$ | *ke/u*$^{?}$-*wi*$^{?}$-*ko*$^{?}$ | *a-ra-ta*$^{?}$ | *s/tu*$^{?}$-*re*$^{?}$-*ma*$^{?}$
A.15	30-52-*lo*$^{?}$ | *a-ka*$^{?}$-*ra* | *ke/u*$^{?}$-76-*ki*$^{?}$ | *nu*$^{??}$-*ka*$^{?}$-*ro-no*$^{?}$ | 30-*pa*$^{?}$-*ta*$^{?}$-*ra*
A.16	*nu*$^{??}$-62-*li* | 62-*ni*$^{?}$ | *e*$^{?}$-76 | *ka*$^{?}$-*pa*$^{?}$-*ni*$^{?}$ | *a*-62-*sa*$^{?}$
A.17	*ma*$^{?}$-76-*re*$^{?}$ | *e*$^{?}$-*le*$^{?}$-80 | *a-wi*$_2$$^{??}$-*ri* \| *si*$^{?}$-*ja*$^{?}$-*no*$^{?}$ | *ki*$^{?}$-*si*$^{?}$-*lo*$^{?}$-*t/pu-wa*$^{?}$
A.18	*ne*$^{??}$-*ri-se*$^{??}$ | *a-ra* | *ke/u*$^{?}$-*wi*$_2$$^{??}$-*lo*$^{?}$-*no*$^{?}$ \| *za*$_2$$^{??}$-*ra-ra* \| *a-sa*$^{?}$-37-*lo*$^{?}$
A.19	*za*$_2$$^{??}$-30-*wa*$^{?}$ \| *za*$_2$$^{??}$-*no*$^{?}$-*ra-na*$^{?}$ | *e*$^{?}$-*re*$^{?}$-*pi*$^{?}$-*na*$^{?}$ | *ta*$^{?}$-*ri* | *si*$^{?}$-*pi*$^{?}$
A.20	*za*$_2$$^{??}$-*sa*$^{?}$-*sa*$^{?}$ | *ka*$^{?}$-*jo* | *i-ne*$^{??}$-*lo*$^{?}$ | *la*$^{?}$-72 | *se*$^{??}$-*ra-re*$^{?}$ ●
A.21	••-*jo*-*ti*-80-•• | *u-na*$^{?}$ | *ko*$^{?}$-72-*ri* | *sa*$^{?}$-*li-za*$_2$$^{??}$-*no*$^{?}$
A.22	]*re*$^{?}$-*to*$^{?}$ | *a-* *wi*$_2$$^{??}$-*sa*$^{?}$ [
	inf. mut.

FUTURE WAYS

The obvious must be stated: the discovery and publication of more Cypro-Minoan inscriptions would be fundamental for "a more complete decipherment" and the elucidation of the languages or languages written in the bulk of Cypro-Minoan inscriptions.[1201] Fortunately, we have seen that in recents years new finds and publications have not been numerous but seem nevertheless continuous. The discovery of the new clay tablets at Pyla-Kokkinokremos (2012), the first since the 1950s, may soon inaugurate a new momentum in the investigation of Cypro-Minoan. Apart from the short description that has been published and is reported in section 1.2.2, for a while two photographs of one of the tablets (the one opisthographic and with the inscribed edge) were made available at https://www.efsyn.gr/arthro/stin-pyla-oi-pinakides-eihan-

[1201] *CMI* I: 271; Steele (2013: 242).

rahi-san-ta-simerina-vivlia.[1202] We need to wait for the proper publication, but it seems possible that the tablet in question contains the sign forms CM 65 and 78. If this is the case, the discovery would be of major importance, because these forms have so far been taken as exclusive to, and representative of, an independent CM 2 script. Their appearance outside Enkomi would further highlight the inconsistence of the traditional division. Finally, it would be of utmost interest to see what could result from applying the set of phonetic values offered here to these new inscriptions.

[1202] Visited on 16/11/2014.

Appendix A

CRITICAL TRANSCRIPTION OF THE CORPUS

AIMS AND PRESENTATION

Although the consultation of the corpora cannot be substituted, one of the two goals of this appendix is to provide a reference for the discussions in the text, in order to facilitate the autonomous reading of the dissertation. The inscriptions in *HoChyMin* (##002-217) are given first and organized according to the artificial divisions of CM 1, 2 and 3. The so-called "CM 0", represented by the clay tablet ##001 = ENKO Atab 001, is absent, as it is treated in every respect in Chapter 3. Next come the documents added to the *corpus* by Ferrara (ADD##218-244), followed lastly by a small number of inscriptions published separately (ADD##245-253) and two uncollected ones (Erimi-*Kafkalla* T. 2/2 and RS 1963 from Ugarit). The readings are given according to the corpora (*HoChyMin* for ##002-217 and *CMI* for ADD##218-244). The inscriptions ADD##247-253 follow the interpretations in Valério (2014b). All the others are given according to the individual publications.

The other goal is to argue thoroughly for a number of corrections that have been proposed with respect to the readings given in the editions of *HoChyMin* (for ##002-217) and the other publications (for ADD##218-253). For each emendation proposed, I provide first the reading of the sequence in question according to the *corpus*, followed by my own interpretation with the corrected portions marked in bold. For the epigraphic apparatus see the *Introduction*. The corrections are reasoned with the aid of graphic material in the form of the published photographs (or drawings, when photographs are not available) and drawings produced by me based on the latter. The photographs of *HoChyMin, CMI II* and other relevant publications were digitized and, when necessary, enhanced with computer software. To improve the visibility of the traits of the signs discussed, the levels of brightness, contrast and tonal range were adjusted. In general, the photographs were not inserted at any particular scale. Not only would it have been difficult given the varying ways in which illustrations are presented in the different publications, as it would not add much to the purposes of the appendix. I have repeated the transnumerations under the pictures only in those cases where multiple signs are discussed and some confusion in identifying which photographs belonged with which grapheme might arise.

CM 1

##002. ENKO Abou 001 (*HoChyMin*: 64)

104-99-82 | 19

##003. ENKO Abou 002 (*HoChyMin*: 65)

82-50-09 |

##004. ENKO Abou 003 (*HoChyMin*: 65)

41-28-21 | 55 → **41**-28-21 | 55

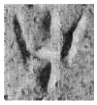
		
		
First sign		CM 41 (ENKO Abou 016)

##005. ENKO Abou 004 (*HoChyMin*: 66)

53-107-99

##006. ENKO Abou 005 (*HoChyMin*: 66)

101-04-13-50 | 25 → **102**-04-**08**-50 | 25

				
				
First sign		CM 101 > 102 (ENKO Abou 010)	CM 101 > 102 (ENKO Abou 075)	CM 101 > 102 (ENKO Arou 001.04)

Olivier (after É. Masson) distinguishes a sign CM 101 from 102, but the consequence is an unlikely distribution in ENKO Arou 001: the cylinder would feature two examples of 101 and none of 102, which is unlikely when the latter is one of the most frequent signs

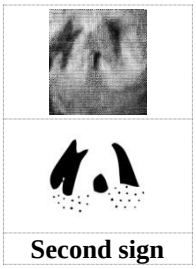
of Cypro-Minoan. Assimilating CM 101 (or at least the majority of the signs presently identified as such) to 102 solves this problem (see 2.3.20). As seen here, the shape of the first sign of ENKO Abou 005 is identical to that of CM 101 in ENKO Abou 075 and ENKO Arou 001.04, and the latter, in turn, is very similar to the example in ENKO Abou 010 (see below). If we accept the assimilation CM 101 > 102, the correction proposed for the initial sign is unproblematic.

##007. ENKO Abou 006 (*HoChyMin*: 67)

38-107-09-41

##008. ENKO Abou 007 (*HoChyMin*: 67)

••-28-25-96 → **(••-)28**-25-96



Second sign

The lower portion of the second sign seems damaged. Are signs 23 and 27 excluded? Olivier sees traces of a sign on the left which neither É. Masson nor Ferrara document.

##009. ENKO Abou 008 (*HoChyMin*: 68)

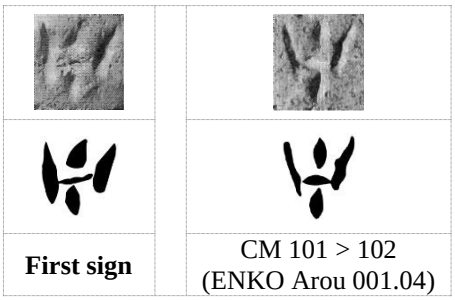
••-••-••-••

##010. ENKO Abou 009 (*HoChyMin*: 68)

••-••-••-••

##011. ENKO Abou 010 (*HoChyMin*: 69)

101-37-08 → **102**-37-08

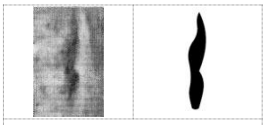


First sign | CM 101 > 102 (ENKO Arou 001.04)

For the assimilation of É. Masson and Olivier's 101 to 102, cf. the discussion in ENKO Abou 005.

##012. ENKO Abou 011 (*HoChyMin*: 69)

107-••-••-••-82-61-06-99 → 107-••-•• | 82-61-06-99

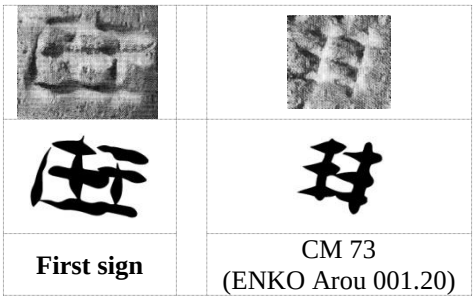


Fourth sign

The fourth sign appears to a divider, which is a plausible reading considering that clay balls exhibiting (with certainty) sequences of more than six signs are otherwise unattested. We cannot, however, exclude CM 11 entirely.

##013. ENKO Abou 012 (*HoChyMin*: 70)

75-27-53 | 107-27 | → **73**-27-53 | 107-27 |



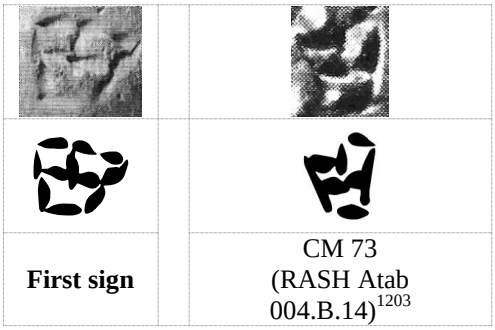
First sign

CM 73
(ENKO Arou 001.20)

The first sign is certainly CM 73. It is unclear why Olivier reads it hesitantly as CM 75 (𒌅), which elsewhere never looks like this. It is likely that his choice was in part motivated because the square-shaped CM 75, as common as it is in the remainder of CM 1 and the other subcorpora, is otherwise absent from the clay balls. Yet the "grid-like" ductus of this sign is diagnostic of CM 73. See 2.3.16.

##014. ENKO Abou 013 (*HoChyMin*: 70)

75-96 | 06 → **73**-96 | 06



First sign

CM 73
(RASH Atab 004.B.14)[1203]

The first sign is certainly CM 73. Cf. also ENKO Abou 012.

[1203] Photograph according to É. Masson (1974: 33, 57, fig. 17, Pl. II).

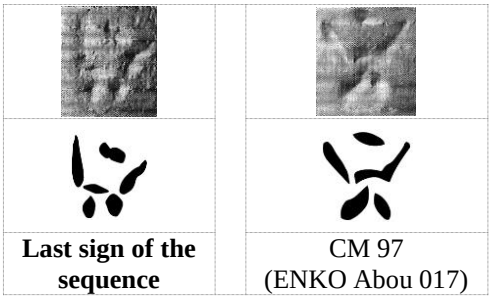
##015. ENKO Abou 014 (*HoChyMin*: 71)

04-91-82-27-••-•• → 04-91-82-27-••(-••)

For, Olivier -44-44 is possible for the last two signs, but he also conceives that there may be just one character. The latter is also what the drawing in *CMI II*: 130 implies.

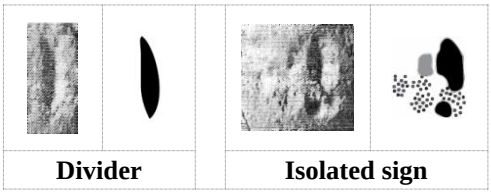
##016. ENKO Abou 015 (*HoChyMin*: 71)

102-73-04-97 | •• → 102-73-04-**97 | 53**



Last sign of the sequence	CM 97 (ENKO Abou 017)

The last sign of the sequence is certainly CM 97. Cf. ENKO Abou 017 for this type of short upper horizontal stroke.



Divider	**Isolated sign**

The penultimate sign is a divider, whereas the last sign, albeit damaged, may be tentatively read as a broken CM 53.

##017. ENKO Abou 015bis (*HoChyMin*: 72)

] •• ⌊ •• [

##018. ENKO Abou 016 (*HoChyMin*: 72)

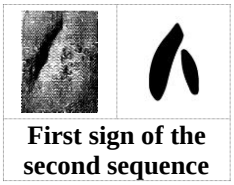
41-28-21 | 19

##019. ENKO Abou 016bis (*HoChyMin*: 73)

Unepigraphic.

##020. ENKO Abou 017 (*HoChyMin*: 73)

44-61-97 | 12*b*-04

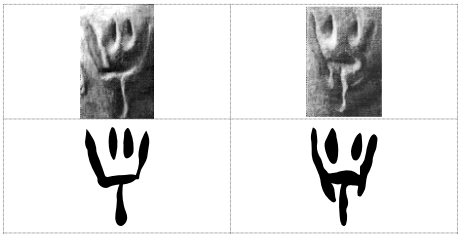


First sign of the second sequence

For this rare form as being possibly an unfinished instance of CM 13, see 2.3.3 and 2.3.21.

##021. ENKO Abou 018 (*HoChyMin*: 74)

110-39-97 | 06-73-110-27-05



First sign of the first sequence | **Third sign of the second sequence**

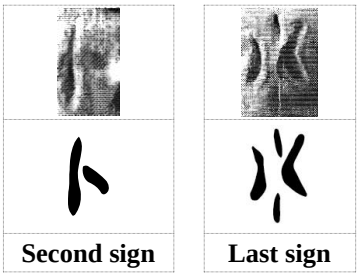
The first character of the first sign-group and the third of the second sequence are the same, but they present a rare shape. The second example supports their identification as a rare variant of CM 110, yet it would help confirming it if we could locate other examples.

##022. ENKO Abou 019 (*HoChyMin*: 74)

102 | 27-06-97

##023. ENKO Abou 020 (*HoChyMin*: 75)

27-04-103 → 27-04-**103**, or 27 **|** **103**



Second sign | **Last sign**

If the oblique stroke of the second sign were intentional, then CM 04 is a strong possibility (and possibly CM 12*b*?). The last sign is either the rare CM 103 or a variant of 102. The latter option would be more viable if the second character were a divider.

##024. ENKO Abou 021 (*HoChyMin*: 75)

102-73-04-97-110-73 | 96

##025. ENKO Abou 022 (*HoChyMin*: 76)

27-82-13 | 23-72-12-09-72 → 27-82-13 | 23-72-12-**09**-72

			
			
Fourth sign of the second sequence		CM 09 (ENKO Arou 001.11)	CM 09 (ENKO Arou 001.13)

Regarding the last sign of the first sequence, see Chapter 2 on the individualization of signs CM 8 and 13. The reading of the fourth sign of the second sequence as CM 09 is not to be doubted as its ductus has parallels not too dissimilar in ENKO Arou 001.

##026. ENKO Abou 023 (*HoChyMin*: 76)

23-75-55-09-75 → 23-**73**-55-09-**73**

	
	
Second sign	**Fifth sign**

There are no paleographical grounds to link the second and fifth characters of this sequence with the forms of CM 75 (𖼻) seen in other subcorpora, hence they are only comparable to CM 73 (𖼳, 𖽄) (cf. above ENKO Abou 012).

##027. ENKO Abou 024 (*HoChyMin*: 77)

15-17-08 | 15 → 15-17-**13** | 15

				
				
Last sign of the sequence		CM 13 (ENKO Abou 027)		CM 13 (ENKO Abou 074)

The last sign of the sequence was erroneously transcribed as CM 08 (𓀜) by Olivier. It is CM 13 (𓀝). See Chapter 2.

##028. ENKO Abou 025 (*HoChyMin*: 77)

110-96-34

##029. ENKO Abou 026 (*HoChyMin*: 78)

12*b*-04-97 | 102



First sign of the first sequence

It is possible that 12*b* is in fact an unfinished 13 that lacks its topping (see ENKO Abou 017 above, or sections 2.3.3 and 2.3.21).

##030. ENKO Abou 027 (*HoChyMin*: 78)

15-17-08 | 50-46-34-97 → 15-17-**13** | 50-46-34-97

##031. ENKO Abou 028 (*HoChyMin*: 79)

102-25-97-••

The existing drawings and photographs are not sufficient to assess the reading.

##032. ENKO Abou 029 (*HoChyMin*: 79)

102-27-70-86

##033. ENKO Abou 030 (*HoChyMin*: 80)

87-82-24

##034. ENKO Abou 031 (*HoChyMin*: 80)

82-95-88 | 25 → 82-**96**-88 | 25

		
		
Second sign of the sequence		CM 96 (ENKO Abou 025)

The second sign of the first sequence is not CM 95 (which would be a hapax in the clay balls), but CM 96, as proved by the ductus (already Duhoux 2013: 42–44).

##035. ENKO Abou 032 (*HoChyMin*: 81)

09-69 | 04-104-37-53

##036. ENKO Abou 033 (*HoChyMin*: 81)

82-97

##037. ENKO Abou 034 (*HoChyMin*: 82)

110-46-97 | 23-15 → 110-46-**97** | 23-15

			
			
Last sign of the first sequence		CM 97 (ENKO Abou 017)	CM 97 (ENKO Abou 060)

I agree with Olivier that CM 97 is preferable to CM 104 for the last sign of the first sequence, not just because it matches variants of that sing in ENKO Abou 017 and 060, but also because of its typical word-final position (CM 104 is mostly initial). The author reads the last sign of the second sequence as CM 15, but hesitantly, since its ductus

resembles that of CM 21. For an argument that the two forms, CM 15 and 21, actually represent the same sign, see 2.3.4.

##038. ENKO Abou 035 (*HoChyMin*: 82)

46-17 | 44

##039. ENKO Abou 036 (*HoChyMin*: 83)

46-15-85-88

As with ENKO Abou 034, Olivier reads the second sign as CM 15, but hesitantly, as its shape resembles that of CM 21. For an argument that the two forms, CM 15 and 21, actually represent the same sign, see 2.3.4.

##040. ENKO Abou 037 (*HoChyMin*: 83)

110-73-85

##041. ENKO Abou 038 (*HoChyMin*: 84)

82-103-99-23 | 04

##042. ENKO Abou 039 (*HoChyMin*: 84)

01-85-88-112

##043. ENKO Abou 040 (*HoChyMin*: 86)

01-23-72-85 | 05

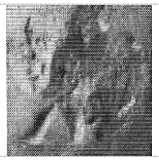
The reading of the second sign is probably correct (cf. ENKO Abou 064 and 066 for the same sequence).

##044. ENKO Abou 041 (*HoChyMin*: 86)

27-50-12 | 50

##045. ENKO Abou 042 (*HoChyMin*: 85)

102-87-104-97 | 112 → 102-87-••-97 | 112



Third sign of the sequence

The sign in question is damaged, so it cannot be decided whether it is CM 104 or 107. Cf. the discussion about this sequence below, a propos of ENKO Abou 069.

##046. ENKO Abou 043 (*HoChyMin*: 85)

110-68-107-09-27 | 112 → 110-**97**-107-09-27 | 112

See 2.3.14 for the reinterpretation of the second sign of the first sequence.

##047. ENKO Abou 044 (*HoChyMin*: 87)

44-61-97-19-110

Fourth sign

CM 19
(ENKO Avas 006)

Given the attestation of 44-61-97 elsewhere (ENKO Abou 017 and 048) and the predominance of the SEQUENCE + DIVIDER + ISOLATED SIGN formula on the clay balls, it is possible that what seems to be a fourth sign, namely CM 19 (the variant see in ENKO Avas 006), is actually a scribal mistake for a divider. If a sign, Sign CM 110 appears in isolation on two other balls (ENKO Abou 078 and 081).

##048. ENKO Abou 045 (*HoChyMin*: 87)

102-73-04-97 | 23

Isolated sign

The isolated sign could in theory be CM 33, but the latter is so far thoroughly absent from the clay balls subcorpus. CM 23 is therefore far more likely.

##049. ENKO Abou 046 (*HoChyMin*: 88)

104-72-13-67 | 08 → 104-72-**08**-67 | **13**

##050. ENKO Abou 047 (*HoChyMin*: 88)

110-34-73-50

##051. ENKO Abou 048 (*HoChyMin*: 89)

44-61-97 | 15

##052. ENKO Abou 049 (*HoChyMin*: 89)

102-68-110-67 | 23 → 102-**97**-110-67 | 23

See 2.3.14 for the reinterpretation of the second sign of the first sequence as CM 97 (cf. also ENKO Abou 043 above).

##053. ENKO Abou 050 (*HoChyMin*: 90)

107-110-23

##054. ENKO Abou 051 (*HoChyMin*: 90)

102-09-82-85-15

##055. ENKO Abou 052 (*HoChyMin*: 91)

102-87-107-97 | 39

##056. ENKO Abou 053 (*HoChyMin*: 91)

27-13-97 | 82 → 27-**08**-97 | 82

On the second sign see 2.3.2.

##057. ENKO Abou 054 (*HoChyMin*: 92)

25-82-97-11-06 → 25-82-**13** | 06

	
	
Third sign	**Fourth sign**

The form of the third sign is compatible with the diagnostic traits of CM 13. The fourth character is more consistent with a divider than with the assured instances of CM 11.

##058. ENKO Abou 055 (*HoChyMin*: 92)

06-25-82-**97** | 46 → 06-25-82-**97** | 46

			—
			
Fourth sign		CM 97 (HALA Abou 001)	CM 97 (ENKO Avas 002)[1204]

The reading of the fourth sign of the sequence as CM 97 is not to be doubted.

##059. ENKO Abou 056 (*HoChyMin*: 93)

81-97 | 50

##060. ENKO Abou 057 (*HoChyMin*: 93)

102-06-67-91-72

##061. ENKO Abou 058 (*HoChyMin*: 94)

102 | 06

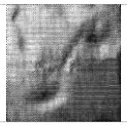
[1204] Drawing by É. Masson (1979b: 569, fig. 2) apud *HoChyMin*: 176.

##062. ENKO Abou 059 (*HoChyMin*: 94)

[[25-12 | 35]]

##063. ENKO Abou 060 (*HoChyMin*: 95)

••-87-104-97 → ••-**88**-104-97

	
	
Second sign	CM 88 (ENKO Abou 031)

Despite the poor quality of the photograph, the second sign looks like CM 88.

##064. ENKO Abou 061 (*HoChyMin*: 95)

27-50-12-05-102-87-78 → 27-50-12-05-102-87-**13**

On the last sign see 2.3.2.

##065. ENKO Abou 062 (*HoChyMin*: 96)

110-23-59

##066. ENKO Abou 063 (*HoChyMin*: 96)

64-09 | 64-08-91-88 → 64-09 | 64-**13**-91-88

As noticed by Olivier, the second sign appears to be CM 87 amended to CM 09 (see discussion with illustrations in 4.2.3.1).

##067. ENKO Abou 064 (*HoChyMin*: 97)

01-23-72-85 | 64

The sequence is comparable to the one in ENKO Abou 040 and 066, which implies the correctness of the reading of the first sign. Still, CM 01 may have been corrected from a mistaken sign (CM 02?).

##068. ENKO Abou 065 (*HoChyMin*: 97)

102-97 | 08-72-04 → 102-97 | **13**-72-04

Olivier mentions the presence of an unexplainable small oblique stroke to the right of CM 72 that makes it comparable to the last sign of PSIL Asta 001.

##069. ENKO Abou 066 (*HoChyMin*: 98)

01-23-72-85 | 112

##070. ENKO Abou 067 (*HoChyMin*: 98)

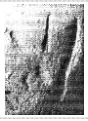
64-05-24 | **81**-08-09-72 → 64-05-24 | 81-**13**-09-72

				
				
First sign of the second sequence		CM 81 (ENKO Abou 076)	CM 81 (ENKO Abou 056)	CM 50 (ENKO Abou 056)

The first sign of the second sequence is most probably CM 81 and not CM 50. Cf. the example of CM 81 and particularly, the variants of CM 81 and 50 that coexist in ENKO Abou 056.
For the second sign of the same sequence see 2.3.2.

##071. ENKO Abou 068 (*HoChyMin*: 99)

61-85-88 | 61 → 61-85-88 | **64**/**107**

					
					
First sign	**Isolated sign**		64 (HALA Abou 002)	107 (ENKO Abou 076)	

CM 64 is a more compelling reading for the isolated sign (cf. the example in HALA Abou 002), but the absence of the lower horizontal stroke also suggests a poorly executed CM 107 (cf. ENKO Abou 076). Olivier duly rejects the reading CM 84 here, as the only other example of this *hypothetical* sign (KITI Ipla 001 *r*.) is possibly an instance CM 50 (see below). Likewise, he rules out CM 83 for the first sign of the sequence, which would be a hapax here, and prefers, with cautious, CM 61. This position is warranted, but we can perhaps consider also the possibility that this 𓌳 is a

mistake for CM 82 (Ⱆ), as it is tempting to compare 61-85-88 with the 82-96-88 of ENKO Abou 031 (for CM 85 as an allograph of CM 96, see 2.3.18).

##072. ENKO Abou 069 (*HoChyMin*: 99)

102-87-104-97 | 27

	—	
		
Third sign of the sequence	CM 107 (ENKO Abou 084)[1205]	CM 107 (ENKO Abou 076)

The third sign of the sequence has only one upper middle stroke, as is expected of 104, but nonetheless resembles the shape of 107 in ENKO Abou 076. What also makes tempting to correct 102-87-104-97 to 102-87-107-97 is the repeated sequence (ENKO Abou 052 and HALA Abou 001). The third sign in ENKO Abou 042 is damaged and cannot help decide the matter (cf. above).[1206]

##073. ENKO Abou 069ter (*HoChyMin*: 100)

Unepigraphic.

##074. ENKO Abou 070 (*HoChyMin*: 100)

[[ ]]

Olivier signals the possible existence of four signs.

##075. ENKO Abou 071 (*HoChyMin*: 101)

04-36-12-**69** | 05 → or 04-36-12-**70**-05

Olivier mentions the possibility of reading CM 70 in the fourth sign, instead of CM 69 followed by a divider, since the small vertical stroke is not identical to other dividers, but mention two points against it: CM 70 never possesses a square-like aspect in its safe occurrences in the clay balls; and CM 05 appears after a divider in another ball (ENKO Abou 040). However, it must also be stressed that CM 69 is rare in the clay balls.

[1205] Drawing from É. Masson (1978b: 808, Tab. 1.g).
[1206] See already Valério (2014b: 113-114).

##076. ENKO Abou 072 (*HoChyMin*: 101)

64-05-24 | 46

##077. ENKO Abou 073 (*HoChyMin*: 102)

<u>46</u>-70-17 | <u>73</u> → **46**-70-17 | <u>73</u>

		
		
First sign of the sequence	CM 46 (ENKO Abou 055)	CM 46 (KITI Avas 001)[1207]

The first sign of the sequence, considered doubtful in *HoChyMin*, seems correctly read. It is similar to a variant of CM 46 found in ENKO Abou 055, deemed acceptable by Olivier, as well as to another doubtful example in KITI Avas 001. In addition, the sign is frequently found in sequence-initial position (cf. Appendix B). Taken together, the three examples seem plausible as CM 46, especially as no other known sign presents itself as a viable alternative.

				
				
Isolated sign	CM <u>73</u> (HALA Abou 002)	CM <u>73</u> (ENKO Avas 003)	CM 73 (ENKO Abou 018)	CM 114 (ENKO Mins 002)

The isolated sign is consistent with two other doubtful occurrences of CM 73 (), in HALA Abou 002 and ENKO Avas 003. A priori, it might seem dangerous to consider the three reading valid. However, the only other possibility is form CM 114, but this lacks the lower horizontal stroke and, as argued in 2.3.18, is more likely an allograph of CM 85/96. Therefore, it seems plausible to take this as further epigraphical development of the variant of CM 73 seen in ENKO Abou 018. For the sign in ENKO Avas 003, see the critical transcription of this inscription below.

##078. ENKO Abou 074 (*HoChyMin*: 102)

25-08 → 25-**13**

See 2.3.2.

[1207] Photograph from *CMI* II: 181.

##079. ENKO Abou 075 (*HoChyMin*: 103)

101-06-23-••-•• → **<u>102</u>**-06-23-••-••

First sign		CM 101 > <u>102</u> (ENKO Abou 005)	CM 104 (ENKO Abou 080)

For the assimilation of most instances of 101 to 102, including this one, see the discussion above, a propos of ENKO Abou 005. The use of a dot instead of an upper central vertical stroke is trivial for signs CM 102 and 104 alike (cf. the example of 104 in ENKO Abou 080).

##080. ENKO Abou 076 (*HoChyMin*: 103)

81-97 | 107-39-••[

##081. ENKO Abou 077 (*HoChyMin*: 104)

82-102-59-08 | 25

Olivier could not locate the inscription, which Ferrara also reports as missing,[1208] so he gives only the drawing, which makes it difficult to reassess the readings. Only two observations can be made: sign CM 102 in a medial position is unusual; for the fourth sign, the drawing indeed suggests CM 08, not CM 13 (cf. 2.3.2).

##082. ENKO Abou 078 (*HoChyMin*: 104)

12-24-<u>110</u>-97 | 110

##083. ENKO Abou 079 (*HoChyMin*: 105)

112-••-•• [|] 112

##084. ENKO Abou 080 (*HoChyMin*: 105)

104-09-06-09

[1208] *CMI* II: 45.

##085. ENKO Abou 081 (*HoChyMin*: 106)

102-09-82-85 | 110

##086. ENKO Abou 082 (*HoChyMin*: 106)

06-06-04-99-46

##087. ENKO Abou 083 (*HoChyMin*: 107)

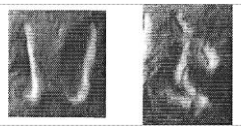
59-17-09-44[→ 59-17-**09**-44[

		
		
Third sign	CM 09 (ENKO Abou 022)	CM 09 (ENKO Arou 001.11)

Despite the quality of the published photograph, the third sign shows traits that are consistent with CM 09.

##088. HALA Abou 001 (*HoChyMin*: 108)

102-87-107-97-82-08 → 102-87-107-97 **| 24**

		
Divider and last sign (separately, according to *HoChyMin*)	**Divider and last sign (jointly)**	CM 24 (HALA Abou 002)

The reading proposed by Olivier entails three problems: (1) 102-87-107-97 is attested as a self-standing sign-group in at least one more clay ball (cf. the annotations to ENKO Abou 069 above); (2) the shape of CM 82 would be exceptional; (3) the last sign is not compatible with CM 08, which for Olivier means CM 13 (𒀸). If we examine together the photos given separately in *HoChyMin* for the alleged last two signs, considering their proximity in the ball, we easily suggest that what we have is a divider separating 102-87-107-97 from a variant of CM 24 that occurs in the other ball from Hala Sultan Tekke.

##089. HALA Abou 002 (*HoChyMin*: 109)

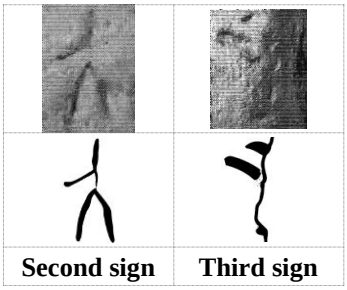
64-05-24 | 73

##090. KITI Abou 001 (*HoChyMin*: 110)

82-04-19-86

##091. KITI Abou 002 (*HoChyMin*: 110)

04-08-104[ ]•• → 04-**13**-••[ ]••



Second sign	Third sign

The second sign, if anything, seems like a poorly executed CM 13 (𐄇). The third sign is badly damaged, but if anything is to be advanced, however timidly, it is that the preserved traces remind the variant of CM 97 attested in ENKO Abou 017, 034 and 060.

##092. ATHI Adis 001 (*HoChyMin*: 112–113)

.01 64-27-04-06
.02 20 IIII 20

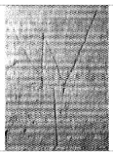
The inscription was for a long time interpreted as Cypro-Greek (= *ICS* 290) and read from the right to the left. *ICS* gives the interpretation *pa-ta-si-o* = /P^{h}antasiō/ 4 ‘Of Phantasios: four’. Olivier argues that the size of the signs decreases rightwards and that therefore the text should be read from the left to the right. This eliminates any likely Greek reading and leads him to assign the inscription to Cypro-Minoan.

##093. ENKO Aost 001 (*HoChyMin*: 114–115)

.01 201 CCC II
.02 202 CC IIIIII

→

.01 **98** CCC II
.02 **26**/**30** CC IIIIII

			 
			
Sign in line 01[1209]		CM 201 (KALA Ppla 001)[1210]	CM 98 (RASH Atab 001.A.01)[1211]

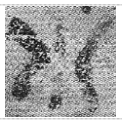
For this sign and its homograph in KALA Ppla 001, Olivier rejects É. Masson's reading as CM 99 because it lacks a "foot". It may be an instance of the rare CM 98, which does not always exhibit a lower horizontal stroke.

			
			
Sign in line 02[1212]	CM 26 (ENKO Arou 001.07)	CM 30 (CYPR? Psce 002)	CM 30 (PYLA Psce 001)

It is identical to CM 26, a form restricted to ENKO Arou 001). However, if the horizontal stroke is accidental, CM 30 needs to be considered.

##094. ENKO Aost 002 (*HoChyMin*: 116–117)

.01]97-104-04-••-••-••[
.02]41 | 46-112 | 103-36[→]41 | 46-112 | **102**-36[
.03]72 | 27-41 | 44-17[
.04 *vestigia* ??
.05] ••-05-68-104[



L. 02: first sign of the third sequence[1213]

[1209] Drawing from É. Masson (1974: 22, fig. 8) apud *HoChyMin*.
[1210] Drawing from É. Masson (1989: fig. 62:2) apud *HoChyMin*.
[1211] The photograph on the left is from Schaeffer (1956: 233, Pl. VIIIa) and the one of the right is from *CMI II*: 255.
[1212] Drawing from É. Masson (1974: 22, fig. 8) apud *HoChyMin*.
[1213] Photograph from to *CMI II*.

Given that this is a painted inscription, there is probably no reason why the first sign of the third sequence in line 0.2 cannot be read CM 102 (𐄘) instead of the rare CM 103.

##095. ENKO Apes 001 (*HoChyMin*: 118)

97-82-11 | 05-108-64 → 97-82-11 | 05-**<u>108</u>**-**<u>37</u>**

			
			
Second sign of the second sequence		CM 108 (CYPR? Psce 005)	CM 107 (KITI Avas 004)[1214]

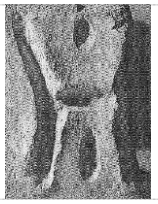
The second sign of the second sequence does resemble formally the other presumable instance of 108 in CYPR? Psce 005. But these are the only two instances of the sign, so we may have here a variant of a more common sign, most like CM 107.

			
			
Last sign of the second sequence		CM 37 (KITI Avas 001)	CM 64 (ATHI Adis 001)

Olivier reads the last sign of the same sequence as CM 64, and wants to see in it the ancestor of both the "Common" and Paphian variants of Cypro-Greek *o*, even though he himself notes that this is hampered by the early chronology (LC I) of the inscription. In addition, a sequence-final position is unusual for CM1 64. In fact, from the point of view of paleography, the sign is closer to CM 37 (cf. KITI Avas 001) than to CM 64. It is discouraging that the variant of CM 64 that resembles it the most is found in ATHI Adis 001 which, as we have seen, may be a late Cypro-Minoan inscription (it has even been suspected of being Cypro-Greek). Therefore, here the reading CM 37 is preferred.

##096. ENKO Apla 001 (*HoChyMin*: 119–120)

]<u>04</u> | 104[→]<u>04</u> | <u>102</u>[


Second sign

[1214] Photograph from *CMI* II: 196.

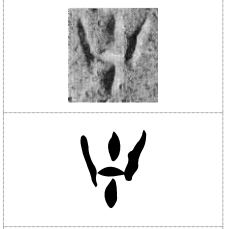
The transnumeration of the second sign given in *HoChyMin* is CM 104, but the photograph (reproduced here), the drawing and the normalized sign clearly show CM 102.

##097. ENKO Arou 001 (*HoChyMin*: 122–123)

.01 38-87-103-23-69-23 ●
.02 73-82 | 82-96-88-23 ¶ 104-
.03 -07 ¶ 53-09-70-12-23 ¶ 110-
.04 -101-53-04 | 27-13-110-97-
.05 -23 ¶ 19 ¶ 82-75-99 |
.06 104-11-24-06-12-23 ¶ 06 ¶
.07 26-13 ¶ | 06 ¶ 46-53-12-
.08 -23 ¶ 82 ¶ 12-25 | 110 ¶
.09 82-96-88-23 ¶ 09-70-26
.10 -75 ¶ 04-87-25 | 41-41
.11 -97 ¶ 38-09-75-07-21 ¶ 38-
.12 21 ¶ 107-11-24-107-27-69-
.13 -23 ¶ 04-09-88-13-07-21
.14 44-26-19-73-25-23-04
.15 87-25 | 44-37-97-103
.16 25-75-103-27-69-25-103
.17 69-04-87-25-39-21-13 |
.18 21-06-107-24-53-11-104-103
.19 25-101-97-13 | 35-21
.20 97-23 ¶ 73-97 ¶ 19-23
.21 69-07-21 ¶ 46-25-04-23
.22 27-05-25-04-99-96-23
.23 04-87-25| 44-88-97-23
.24 25-04-99-07 | 11-06-53-96
.25 25-103-69-82-75-99 | 07-05
.26 82-96-88-23-69-26-50
.27 69-25-103-69-82-75-99 |

Observations and corrections:

.04 -101-53-04 | 27-13-110-97- → -**102**-53-04 | 27-**08**-110-97-



First sign of the first sequence

This sign is very close in shape to 102, which otherwise is absent from the inscription. Since the absence of a superfrequent sign from one of the lengthiest Cypro-Minoan inscriptions is statistically unlikely, the case for reading here 102 instead of a very rare 101 is strong (cf. ENKO Abou 010).

Second sign of the second sequence

The photograph shows that is undoubtedly CM 08.

.07 -26-13 ¶ → 26-**08** ¶

.13 04-09-88-13-07-21→ 04-09-88-**08**-07-21

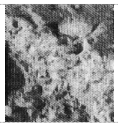
.18 39-21-13 → 39-21-**08**

.19 -25-101-97-13 → -25-**102**-97-**08**

Second sign

See the note to line 04 on correcting CM 101 to 102.

.22 27-05-25-04-99-96-23 → 27-05-25-04-99-**96**/**97**-23



Second sign of the second sequence

For the penultimate sign CM 97 is as possible as CM 96.

Critical re-edition:

.01 38-87-103-23-69-23 ●
.02 73-82 | 82-96-88-23 ¶ 104-
.03 -07 ¶ 53-09-70-12-23 ¶ 110-
.04 -102-53-04 | 27-08-110-97-
.05 -23 ¶ 19 ¶ 82-75-99 |
.06 104-11-24-06-12-23 ¶ 06 ¶
.07 26-08 ¶ | 06 ¶ 46-53-12-
.08 -23 ¶ 82 ¶ 12-25 | 110 ¶
.09 82-96-88-23 ¶ 09-70-26
.10 -75 ¶ 04-87-25 | 41-41
.11 -97 ¶ 38-09-75-07-21 ¶ 38-
.12 21 ¶ 107-11-24-107-27-69-
.13 -23 ¶ 04-09-88-08-07-21
.14 44-26(-)19-73-25-23(-)04
.15 87-25 | 44-37-97(-)103
.16 25-75-103-27-69(-)25-103
.17 69(-)04-87-25(-)39-21-08 |
.18 21-06-107-24-53-11-104-103
.19 25-102-97-08 | 35-21
.20 97-23 ¶ 73-97 ¶ 19-23
.21 69-07-21 ¶ 46-25-04-23
.22 27-05(-)$^{(?)}$25-04-99-96/97-23
.23 04-87-25 | 44-88-97-23
.24 25-04-99-07 | 11-06-53-96(-)
.25 25-103-69(-)82-75-99 | 07-05
.26 82-96-88-23(-)69-26-50
.27 69(-)25-103-69(-)82-75-99 |

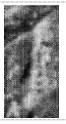
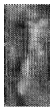
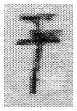
##098. KALA Arou 001 (*HoChyMin*: 134−153)

.01 [[104-24-91 | 104-72-87-99-23]]
.02 [[70-••-46 | 107-91 | 104-91]]
.03 [[33-91 | 104-36 | 39-87-86]]
.04 [[36-34 | 46-13 ¦ 97-23-91-01]]
.05 [[39-06 | 36-72-91-46 ¦]]
.06 [[46-15-86-34-53 | 73-87-23]]
.07 [[••-86 | 04-88-82-••-••-••]]
.08 [[36-••-23 | ••-72-87-••-••[ ]]
.09 [[••-••-44 | 36-86-••-••-••[ ]]
.10 [[46-23••-50-87-86 | 112[ ]]
.11 [[46-88-70 | 27-86-01-06]] [[ ]]
.12 [[35-91-23-72-23-82-86[[ ]]
.13 73-21-46-25-44 | 104-24-91
.14 103-86-91 | 102-34-72[[ ]]
.15 110-82-33-70 | 09-39-44[[ ]]
.16 [[••-•• ¦ 50-23 ¦ ••-••-••]]
.17 [[•• ¦ 24-••-••-••-••-••-••-••]]
.18 [[104-24-91 ¦ ••-15-34-••-••]]

Observations and corrections:

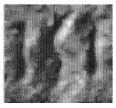
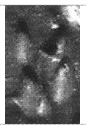
.04

46-13 ¦ 97-23-91-01 → 46-**08**/**01** | **102**-23-91-01

Photograph (*HoChyMin*)			
Photograph of impression (*HoChyMin*)			
Olivier's drawing			
Ferrara's drawing			
	Second sign of second sequence		**First sign of the third sequence**

Both Olivier (*HoChyMin*: 139) and Ferrara (*CMI II*: 148) draw the shape of CM 08, but the photograph only shows traces of one horizontal stroke on the upper edge of the sign, which makes one wonder whether 01 is impossible.

.12 [[35-91-23-72-23-82-86[[→ [[**34**-91-23-72-23-82-86[[

			
			
First sign		CM 35 (RASH Atab 004.A.08)	CM 34 (ENKO Abou 047)

According to the photograph in *HoChyMin*, the first sign is more consistent with CM 34 than CM 35.

Critical re-edition:

_____

.01 [[104-24-91 | 104-72-87-99-23]]
.02 [[70-••-46 | 107-91 | 104-91]]
.03 [[33-91 | 104-36 | 39-87-86]]
.04 [[36-34 | 46-08/01 | 102-23-91-01]]
.05 [[39-06 | 36-72-91-46 |]]
.06 [[46-15-86-34-53 | 73-87-23]]
.07 [[••-86 | 04-88-82-••-••-••]]
.08 [[36-••-23 | ••-72-87-••-••[ ]]
.09 [[••-••-44 | 36-86-••-••-••[ ]]
.10 [[46-23••-50-87-86 | 112[ ]]
.11 [[46-88-70 | 27-86-01-06]] [[ ]]
.12 [[34-91-23-72-23-82-86[[ ]]
.13 73-21-46-25-44 | 104-24-91
.14 103-86-91 | 102-34-72[[ ]]
.15 110-82-33-70 | 09-39-44[[ ]]
.16 [[••-•• | 50-23 | ••-••-••]]
.17 [[•• | 24-••-••-••-••-••-••-••]]
.18 [[104-24-91 | ••-15-34-••-••]]

##099. KALA Arou 002 (*HoChyMin*: 154−156)

.01]••
.02]••-••-••[
.03]••-••-•• -••[
.04]••-59-04 | 81[
.05]44-33-27-••[
.06]••-••-44[
.07 *vacat*
.08 *vacat*
.09 *vacat*
inf. mut.

##100. KALA Arou 003 (*HoChyMin*: 157−160)

.13 ••-••[
.14 87[
.15 102[
.16 99-••[
.17 35[

———————

.01 104-24[
.02]88-••-••[
ca. 10 *vacant*

First sign of line 16

The reason that the first sign of l. 16, which is damaged, can be read as CM 99 with such certainty is not clear from the photograph supplied by Olivier. The drawing in *CMI* II: 150 shows something that resembles CM 09 but the photograph is too small to be of assistance.

##101. KALA Arou 004 (*HoChyMin*:)

———————————

.01 104-24-91[
.02 46-25-09-04[
.03 102-75-23-••[
.04 VII [
.05 *vacat*
.06 *vacat*
.07 *deest*
.08 *vacat*

Corrections:

.01 104-24-91[→ 104-24-91[

The last sign before the fracture is half lost due to the latter and therefore not all diagnostic traits of 91 are preserved. The reading should therefore be given cautiously.

.02 **46**-25-09-04[→ **[[29]]**-25-09-04[

First sign of line 02

Three of the five strokes of the first sign, read by Olivier as CM 46, are deeper than the other two, so it is not impossible that what we have is CM 29 (𒌷) or CM 30 (𒌸) incised over an erased sign.

Critical re-edition:

_____

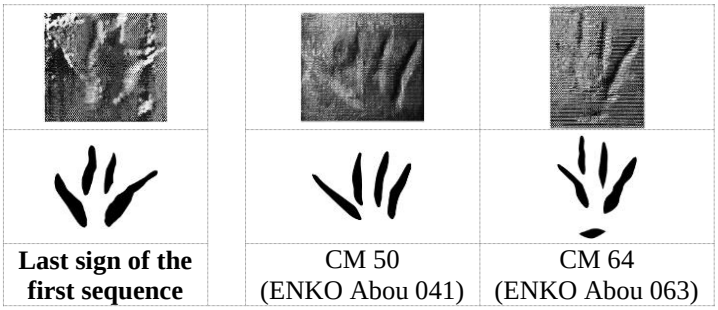
.01 104-24-91[
.02 [[29]]-25-09-04[
.03 102-75-23-••[
.04 VII [
.05 *vacat*
.06 *vacat*
.07 *deest*
.08 *vacat*

##102. KALA Arou 005 (*HoChyMin*: 164–169)

		lat. dex.
.01	••-24-91 | 104-72	••-••
.02	••-]46-96-68-72[	
.03	••-33-64 | 13-97[	**]**••-27
.04	99-09 | 08-69 |	
.05	23-69-30-96-72[	]99-30-96
.06	35-••[	
.07	••[	]••
.08	*vest.*	
.09	*vacat*	
.10	*vacat*	
.11	*vacat*	
.12	*vacat*	
.13	*vacat*	

Corrections:

.03 ••-33-64 | 13-97[→ ••-33-**64**/**50** | **08**-97[



Last sign of the first sequence	CM 50 (ENKO Abou 041)	CM 64 (ENKO Abou 063)

For the last sign of the first sequence CM 50 is also a possibility. CM 64 is more likely only if the inscription shows traces of a lower horizontal stroke, but without an autopsy this cannot be verified.

.04 08-69 → **13**-69

Critical re-edition:

		lat. dex.
.01	••-24-91 | 104-72	••-23
.02	••-]46-96-68-72[	
.03	••-33-64 | 08-97[	**]**••-27
.04	99-09 | 13-69 |	
.05	23-69-30-96-72[	]99-30-96
.06	35-••[	
.07	••[	]••
.08	*vest.*	
.09	*vacat*	
.10	*vacat*	
.11	*vacat*	
.12	*vacat*	
.13	*vacat*	

##103. PSIL Asta 001 (*HoChyMin*: 170)

55-02-09-72 → 55-02-09-**72**:

Last sign

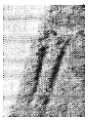
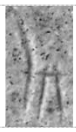
The last sign can hardly represent anything other than CM 72. The two inner horizontal strokes divide the sign in three sections, which appears to be a diagnostic feature of the sign. The extra stroke on the lower right portion seems like a repetition of the right vertical incision (see also ENKO Abou 065).

##104. ALAS Avas 001 (*HoChyMin*: 171)

]73-23-••-••[

##105. ARPE Avas 001 (*HoChyMin*: 172)

]**46**-06-97 | 55-96-••[→]**17**/**46**-06-97 | 55-96-**98**[

		 
First sign of the first sequence		CM 17/46 (MARO Avas 001)[1215]

			 
			
Last sign of the second sequence		Undetermined (ENKO Avas 010)[1216]	CM 98 (RASH Atab 001.A.01)[1217]

The first sign of the inscription is badly damaged, but CM 17 and 46 are both possibilities. The last sign is difficult and the closest parallels are two characters that are likely to be associated with CM 98.

##106. ATHI Avas 001 (*HoChyMin*: 173)

38-87-87-04-09-69-23

##107. ATHI Avas 002 (*HoChyMin*: 174)

02-••[

##108. ENKO Avas 001 (*HoChyMin*: 175)

]25-06-27-25-97[

##109. ENKO Avas 002 (*HoChyMin*: 176)

87-15-82 | 102-73-04-97 | **107-••** → 87-15-82 | 102-73-04-97 | 107-**97**

[1215] Drawing by A. South in Cadogan *et al.* (2009: 158, fig. 11-4).
[1216] Drawing from Dikaios (1971: 315: 56) apud *HoChyMin*.
[1217] The photograph on the left is from Schaeffer (1956: 233, Pl. VIIIa) and the one of the right is from *CMI II*: 255.

Last sign[1218]

It is difficult to reassess this inscription since *HoChyMin* and *CCMI* II provide only drawings. As Olivier notes, the second and last shape of the same sign-group could be CM 97, even if the upper horizontal stroke is missing, but I take this reading with caution.

##110. ENKO Avas 003 (*HoChyMin*: 177)

]| 27-73-64-23

				
				
Second sign		CM 114 (ENKO Mins 002)	CM 85 (ENKO Abou 039)	CM 73 (HALA Abou 002)

For the second sign, as argued in the notes to ENKO Abou 073 (see above), the reading as CM 73 is preferable if it contains a "foot". The drawings in HoChyMin and *CMI* II: 159 both show a lower horizontal stroke as parte of the sign, yet the photograph published leaves soom room for thinking that it is perhaps part of a scratch on the object (a fragment of a deep ceramic bowl). Only an autopsy could confirm or refute this. If the foot is not part of the sign, then we would need to consider CM 85 or 114, which I argue are allographs of the same grapheme (see 2.3.18).

##111. ENKO Avas 004 (*HoChyMin*: 178)

]06-23-13-23 | 110

##112. ENKO Avas 005 (*HoChyMin*: 179)

102-82-69-88-97-23 → 102(-)82-85-88-97-23

[1218] Drawing by É. Masson (1979b: 560, fig. 2) apud *HoChyMin*.

Drawing of ENKO Avas 002[1219]

Inscription made on the handle of a "grande amphore(?)". The first sign, certainly CM 102, is written with its top directed to the mouth of the vessel and there is the possibility, as signaled by Olivier, that this is a potmark distinct from the remaining sign-group. The third sign, read as a doubtful CM 69, may well be a poorly drawn CM 85, even though Olivier states that this "n'est pas beaucoup plus satifaisaint" (see full argument in 2.3.18).

##113. ENKO Avas 006 (*HoChyMin*: 180)

102-19 → **95**-19

First sign	CM0 06 = CM 95 (ENKO Atab 001.01)	CM 95 (ENKO Atab 003.A.10)

The identification of the first sign as CM 95 seems preferable, although on Cyprus this form is so far not attested with certainty outside the CM 0 and CM 2 subcorpora.

##114. ENKO Avas 007 (*HoChyMin*: 181)

23-02

##115. ENKO Avas 008 (*HoChyMin*: 182)

23-82[

##116. ENKO Avas 009 (*HoChyMin*: 183)

38-05[

[1219] É. Masson (1971: 24, fig. 29) apud *HoChyMin*.

##117. ENKO Avas 010 (*HoChyMin*: 184)

102-•• → 102-**98**

 	 	 
Last sign of the second sequence[1220]	CM 98 (ENKO Aost 001.01)	CM 98 (RASH Atab 001.A.01)[1221]

The second sign is identical to CM 98 and, as in the case of RASH Atab 001.A.01, the photograph allows for doubts on the existence of a "foot". Ferrara does register one as part of the sign in either case.
Olivier states that there might be a third sign, but he is not specific about its position. The photograph of in *CMI* II: 165 shows no trace of it.

##118. ENKO Avas 011 (*HoChyMin*: 185)

64 | 64

##119. ENKO Avas 012 (*HoChyMin*: 186)

24-37

##120. ENKO Avas 013 (*HoChyMin*: 187)

]•• | 110

##121. ENKO Avas 014 (*HoChyMin*: 188)

25 | 23 | 21

##122. HALA Avas 001 (*HoChyMin*: 189)

25-25

[1220] Drawing from Dikaios (1971: Pl. 315: 56) apud *HoChyMin*.
[1221] Photograph by Ferrara (*CMI II*: 255).

##123. IDAL Avas 001 (*HoChyMin*: 190)

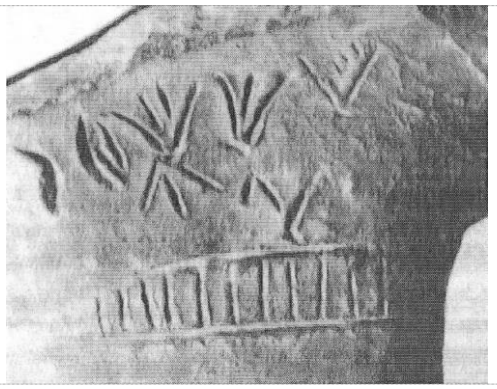
41-41-68 → 41-41-97

The last sign is more likely CM 97 (considered "non impossible" by Olivier), as similar variants are known amongst the secure instances of the latter. Moreover, the sequence 41-41-97 occurs in ENKO Arou 001.10-11, and is now also attested in the clay ball found at Tyrins (TIRY Abou 001). For the full paleographical argument, 2.3.14.

##124. IDAL Avas 002 (*HoChyMin*: 191)

.01 39-64-61-86
.02 23-91

Observations and corrections:



Photograph of the inscription by Persson (apud *HoChyMin*: 191)

This reading of the inscription is as problematic as its history. O. Masson (*ICS*: 249, n.1) considers it Cypro-Greek, whereas Olivier, as well as Egetmeyer (2010: 878–879) consider it Cypro-Minoan. For the first sign, Olivier's reading as CM 39 is superior to O. Masson's interpretation as CGk *xa*. As seen by Masson, there is probably a word-divider that is not part of the sign. In any case, the exact delimitation of the first four strokes is very difficult to establish.
The second sign, if it is Cypro-Minoan, is probably closer to CM 50 than to CM 64, given the absence of a clear "foot" (cf. KALA Arou 005.03 above). On the other hand, the first sign of the second line maight actually be part of it, if what we have is CM 110 (𐄩) (or is it Cypro-Greek *ku*?). Nevertheless, the two parts are drawn separately and it seems more likely that the three strokes below shape CM 23 or CGk *ti*. The third sign is compatible with both CM 61 and CGk *te*. The fourth sign is also ambiguous (CM 86 or CGk *ke*?) as is the last one, in l. 02 (CM 91 or CGk *mi*?).

Critical re-edition (in Cypro-Minoan terms):

.01 **39 | 50/64**-61-86
.02 **23**-91

##125. KALA Avas 001 (*HoChyMin*: 192)

38-<u>05</u>

##126. KALA Avas 002 (*HoChyMin*: 193)

70-<u>82</u>-23 → 70-**<u>114</u>**-23

			
			
Second sign		CM 114 (ENKO Mins 002)	

As is visible in the photograph, the second sign has a further, unnoticed vertical stroke that makes it closer to form 114.

##127. KATY Avas 001 (*HoChyMin*: 194)

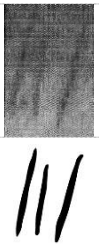
<u>38</u>-27-06 → **38**-27-06

First sign[1222]

The first sign is not doubtful, as it is identical with to the instance of CM 38 in MYRT Mvas 002, as Olivier himself recognizes.

##128. KATY Avas 002 (*HoChyMin*: 195)

<u>56</u>-53-82-102 → **<u>56</u>**-53-82-102 or 102-82-53-**<u>56</u>**



Last sign[1223]

[1222] Photograph from *CMI* II: 176.
[1223] Drawing by É. Masson (1972a: 130, fig. 3) apud *HoChyMin*.

The sequence-final occurrence of CM 102 suggests the reading may be sinistroverse. If this is so, perhaps CM 23 is a possible reading for the last sign. Alternatively, it could be a numerical notation, "III", which is another possibility pondered by Olivier.

##129. KATY Avas 003 (*HoChyMin*: 196)

87-72[

##130. KITI Avas 001 (*HoChyMin*: 197)

05-37-97-23-46 → 05-37-97-23-46

		
		
Last sign[1224]		CM 46 (ENKO Abou 073)

The reading of the last sign is not to be doubted. Cf. the discussion concerning ENKO Abou 073 above.

##131. KITI Avas 002 (*HoChyMin*: 198)

04-26

##132. KITI Avas 003 (*HoChyMin*: 200)

28-27

##133. KITI Avas 004 (*HoChyMin*: 199)

27-28

##134. KITI Avas 005 (*HoChyMin*: 201)

28-27

[1224] Photograph by Ferrara (*CMI* II: 181).

##135. KITI Avas 006 (*HoChyMin*: 202)

23 | 109

##136. KITI Avas 007 (*HoChyMin*: 203)

23-••

##137. KITI Avas 008 (*HoChyMin*: 204)

23 | 107

##138. KITI Avas 009 (*HoChyMin*: 205)

23 | ••

> The second sign is badly broken but it is at least worth mentioning that according to the drawing given by Olivier, CM 107 is possible. Cf. KITI Avas 008, 014 and 018.

##139. KITI Avas 010 (*HoChyMin*: 206)

23 | 109

##140. KITI Avas 011 (*HoChyMin*: 207)

27-72

##141. KITI Avas 012 (*HoChyMin*: 208)

23-12

##142. KITI Avas 013 (*HoChyMin*: 209)

23 | 112

##143. KITI Avas 014 (*HoChyMin*: 210)

23 | 107

##144. KITI Avas 015 (*HoChyMin*: 211)

06-23

##145. KITI Avas 016 (*HoChyMin*: 212)

II 38 III

##146. KITI Avas 017 (*HoChyMin*: 213)

]••-21

##147. KITI Avas 018 (*HoChyMin*: 214)

23 | 107

##148. KITI Avas 019 (*HoChyMin*: 215)

107-19 → **<u>107</u>**-19

First sign[1225]

If the left "leg" of the first sign is accidental, then 110 would be a more appropriate reading. Unfortunately, neither Olivier nor Ferrara published photographs of this inscription, so the reading must be taken with caution.

##149. KOUR Avas 001 (*HoChyMin*: 216)

110-63

Given the occurrence of a sequence <u>110</u>-61 in KOUR Avas 004, one wonders if CM 63 and CM 61 are not just variants of the same sign (see 2.3.6).

##150. KOUR Avas 002 (*HoChyMin*: 217)

<u>110</u>-63

See KOUR Avas 001.

[1225] Drawing from *CMI II*: 201.

##151. KOUR Avas 003 (*HoChyMin*: 218)

]63

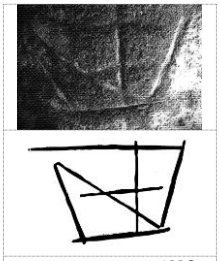
It is tempting to restore [110-]63. See KOUR Avas 001 and 002.

##152. KOUR Avas 004 (*HoChyMin*: 219)

110-61

##153. MAAP Avas 001 (*HoChyMin*: 220)

38-•• → 38-**73**



Second sign[1226]

CM 73 is a better candidate for the second sign than CM 75 (for the alleged reticular variants of CM 75 in the clay balls as actual instances of CM 73, see the annotations to ENKO Abou 012 above and 2.3.16).

##154. MAAP Avas 002 (*HoChyMin*: 221)

104-97

##155. MAAP Avas 003 (*HoChyMin*: 222)

01-38 → or **38-01**?

Given the "final" position of 38, I think an upward reading is possible.

##156. MAAP Avas 004 (*HoChyMin*: 223)

]••-21-23 →]••-17-23

[1226] Photograph from *CMI II*: 206 and drawing from É. Masson (1988: 399, pl. A.5, apud *HoChyMin*).

First sign

Second sign

CM 17
(ENKO Abou 035)

CM 17
(CYPR Mvas 003)

Olivier could not see the object, so his edition and drawing derive from É. Masson (1988). However, the photograph and drawing published by Ferrara (*CMI II*: 207), which I reproduce here, allow for a reassessment of the inscription. CM 35, 37 and 38 would all be possible for the first sign. The second sign is needs to be revised to CM 17.

##157. MARO Avas 001 (*HoChyMin*: 224)

38-46-23 | 44-27-68-23 → 38-46-23 | 44-27-**97**-23

Second sign of the first sequence

CM 17
(ENKO Abou 024)

CM 46
(MARO Avas 003)[1227]

It is not impossible that this sign is CM 17, although admittedly the latter never occurs with the horizontal stroke. Even though the character does not correspond well with the diagnostic form of CM 46, it is consistent with another example from the same settlement (Maroni-*Vournes*) and written in the same type of medium (cf. MARO Avas 003). In fact, the variants from *Vournes* are part of the evidence that CM 46 and CM 47 (𐤇) are the same sign.
Cf. IDAL Avas 001 and the analysis in Chapter 2 for the penultimate sign of the second group as CM 97.

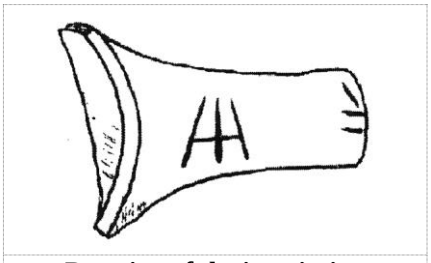
[1227] Photograph from Cadogan *et al*. (2009: 151, fig. 6); the drawing is based on the photograph and the drawing (*ibid*., fig. 5), which is credited to A. South.

##158. MYRT Avas 001 (*HoChyMin*: 225)

102-87-28-110

##159. MYRT Avas 002 (*HoChyMin*: 226)

25-67 → 25-67[



Drawing of the inscription (É. Masson 1972a: 130, fig. 4, apud *HoChyMin*)

The corpora only include drawings. What little remains of the second sign does not allow a positive identification. A further difficulty is that *HoChyMin* and *CMI* II only provide drawings.

##160. TOUM Avas 001*a-c* (*HoChyMin*: 227–229)

a:

sup. mut.
.01]•• | 27-••[
.02]••[
inf. mut.

b:

sup. mut.
]102[
inf. mut.

c:

sup. mut.
.01]12
.02]109-17-••
inf. mut.

##161. KITI Iins 001 (*HoChyMin*: 231)

.01 107-104-23
.02 82-95-88 | 110-23-59-21-23 | 102

→

.01 107-104-23
.02 82-**96**-88 | 110-23-59**(-21-)**23 | 102

The third sign of the first sign-group of the second line is erased, but CM 96 is more likely given that in the whole of CM 1 there is only a single and doubtful instance of CM 95. Cf. ENKO Abou 031 above and Chapter 2.

##162. KITI Iins 002 (*HoChyMin*: 234)

.a]102-04-53-70
.b 23-92-97 | 23[

##163. KITI Ipla 001 (*HoChyMin*: 235–236)

.r 81-110-109-64-72 → 81-110-109-**50**-72

			
			
Penultimate sign	CM 50 (ENKO Abou 041)	CM 61 (ENKO Abou 011)	CM 64 (ENKO Abou 063)

The two possibilities mentioned by Olivier for the fourth sign, CM 64 and 61, are unconvincing. Both have as a diagnostic trait a lower horizontal stroke, whereas CM 61 has just one upper inner vertical stroke, not two. A much more suitable match is the open variant of CM 50 attested in the clay balls (cf. e.g. ENKO Abou 041).

.v 102-85 | 102-73-04-97-23


Last sign of the first sequence

For Olivier, the lack of a medial horizontal stroke in the initial sign of the two sequences suggests CM 103, but ends up transcribing 102 because of the attestation of 102-73-04-97 in ENKO Abou 015, 021 and 045 and ENKO Avas 002. A problem with

the reading of the first sequence is that the photograph available shows no diagnostic trait of CM 85.

##164. ENKO Mbij 001 (*HoChyMin*: 237)

••[-••-]•• | ••[-••-]••

This is an inscribed gold ring which Olivier could not find in the Cyprus Museum in Nicosia and for which there is therefore only a drawing by Courtois (1984). Given the little detail of the latter, one cannot go much beyond Olivier's careful transcription and observation that there are apparently six signs.

##165. KALA Mbij 001 (*HoChyMin*: 238)

96-110-33-55 (reading in impression)

→ 55-33-110-96 (reading on the ring)

			
			
Third sign	CM 33 (KALA Arou 002.05)	CM 30 (CYPR? Psce 002)	CM 41 (SALA Psce 001)[1228]

For the third sign, the forms CM 30 and 41 are not impossible, but one would admittedly have to posit one extra lower oblique stroke. If this is CM 33 (which is very rare outside CM 2), does it represent an early paleographical variant? Cf. the attestation of the same sign in the next inscription.

##166. KALA Mbij 002 (*HoChyMin*: 239)

96-110-33-55 (reading in impression)

→ 55-33-110-96 (reading on the ring)



Third sign

[1228] Photograph from *CMI* II: 243.

This is the same text seen in KALA Mbij 001.

##167. KITI Mexv 001 (*HoChyMin*: 240)

23 | 82

##168. ENKO Mins 001 (*HoChyMin*: 241)

15-17-23 | 104-72-23

##169. ENKO? Mins 002 (*HoChyMin*: 242)

.01 114
.02 61-82

##170. PPAP Mins 001 (*HoChyMin*: 243)

64-11-24-04-12 → *o-pe-le-ta-u*

Here this inscription is considered written most probably in the Cypro-Greek syllabary. See 3.3.2.2.

##171. PPAP Mins 002 (*HoChyMin*: 244)

23 | 23 → *ti* | *ti*

Here this inscription is considered written most probably in the Cypro-Greek syllabary. See 3.3.2.2.

##172. PPAP Mins 003 (*HoChyMin*: 245)

07-97 → 07-97

The presumable inscription consists of two "signs": the first (𐄇) would be a very elaborate (thus suspicious) variant of the rare CM 07; the second would correspond to the variant of CM 97 that resembles a Roman curule chair. In any case, if this is not pseudo-epigraphical, it is at least doubtful as a Cypro-Minoan inscription given its presence in Tomb 49 of Palaepaphos-*Skales* (see discussion in 3.3.2.2).

##173. PYLA Mins 001 (*HoChyMin*: 246)

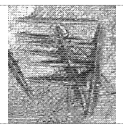
25-21

##174. ENKO Mlin 001 (*HoChyMin*: 247)

102 | 23

##175. ENKO Mlin 002 (*HoChyMin*: 248)

.01 102-23
.02 102-36-23-114-23



Fourth sign of line 02[1229]

##176. ENKO Mlin 003 (*HoChyMin*: 249)

102 | 23

##177. PYLA Mlin 001 (*HoChyMin*: 250)

13-23-25-••[→ **08**-23-25-••[

##178. CYPR Mvas 001 (*HoChyMin*: 251)

104-72-67 → 104-**72**-67

Second sign

The form second sign is certainly consistent with CM 72.

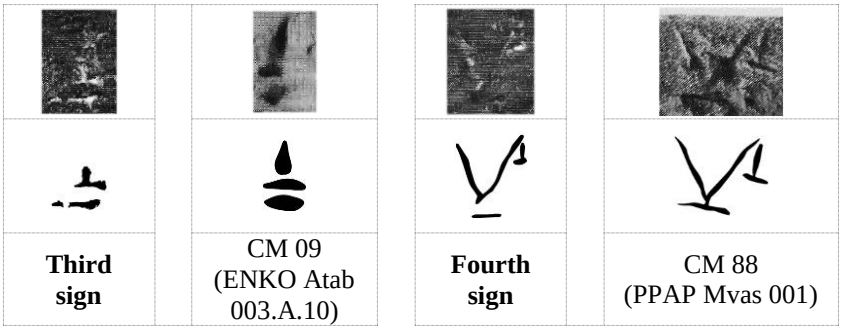
[1229] Photograph by Ferrara (*CMI II*: 221).

##179. CYPR Mvas 002 (*HoChyMin*: 252)

102-109-04-13-23 | 04-04-97 | 06-12

##180. CYPR Mvas 003 (*HoChyMin*: 253)

27-69-09-88-23 | 15-17 → 27-69-**09**-**88**-23 | 15-17

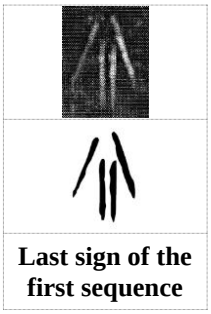


Third sign	CM 09 (ENKO Atab 003.A.10)	**Fourth sign**	CM 88 (PPAP Mvas 001)

The third sign of the first sequence is difficult, but it clearly preserves two parallel horizontal strokes topped by a vertical one. As a result, besides CM 09 no other sign shape is possible, except for CM 10 (𓂝), but this is considered exclusive to CM 2.
The fourth sign of the first sequence is also a clear CM 88, with a form well attested on hard surfaces (cf. ENKO Avas 005 and PPAP Mvas 001).

##181. CYPR Mvas 004 (*HoChyMin*: 254)

92-08-15-23 | 38 → 92-**13**-15-**23** | 38



Last sign of the first sequence

For the last sign of the sequence, it is likely that this is 23 with an "accidental" double vertical stroke, given the propensity of this sign to appear in final position in vessel inscriptions. Nonetheless, it is strange that the possibility of reading CM 33 is not considered in *HoChyMin*.

##182. ENKO Mvas 001 (*HoChyMin*: 255)

82-109-64-23 | CC XXX

→ 82-109-64-23 | **XX III**

For the more probable reading of the numbers as ‘XX III’, see already Palaima (1989b: 44). Cf. also 2.3.22.

##183. ENKO Mvas 002 (*HoChyMin*: 256)

102-109-04-**08**-23 | 112 → 102-109-04-**13**-23 | 112

##184. MYRT Mvas 001 (*HoChyMin*: 257)

38 | 104-**101** → 38 | 104-**101**/**102** or **101**/**102**-104 | 38

Last sign

CM 101 is probably to be taken as a variant of CM 102, which would possibly imply that the inscription is sinistroverse (but cf. ENKO Abou 019, as noted by Olivier).

##185. MYRT Mvas 002 (*HoChyMin*: 258)

38 104-101 → 38 104-**101**/**102** or **101**/**102**-104 38

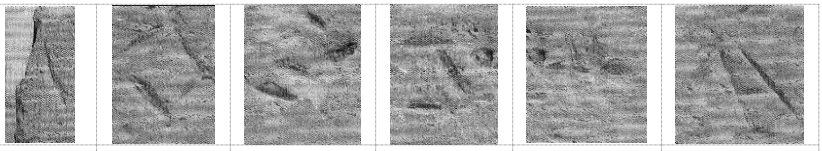
See MYRT Mvas 001, which bears the same inscription but with a divider.

##186. PPAP Mvas 001 (*HoChyMin*: 259)

82-06-82-88-23

##187. ENKO Pblo 001 (*HoChyMin*: 260)

]12-15-••-••-••-27 →]••-15-••-••-••-27



]••	15	••	••	••	27

The first sign is broken by the fracture of the piece and other readings are possible.

##188. KITI Pblo 001 (*HoChyMin*: 261)

91-28-••[

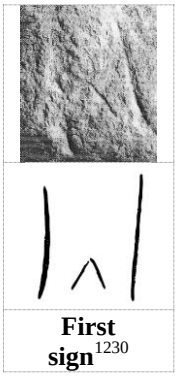
##189. PPAP Pblo 001 (*HoChyMin*: 262)

102 | •• → *a* | *nu*

Here this inscription is considered written most probably in the Cypro-Greek syllabary. See 3.3.2.2.

##190. PPAP Pblo 002 (*HoChyMin*: 263)

109 | 23 → **109**/**50**/**51**-23, or *wa* | *ti*



First sign[1230]

For the first sign, given the linearity of the lateral strokes, sign shapes CM 50 or 51 are not excluded. On the other hand, the script used could be Cypro-Greek.

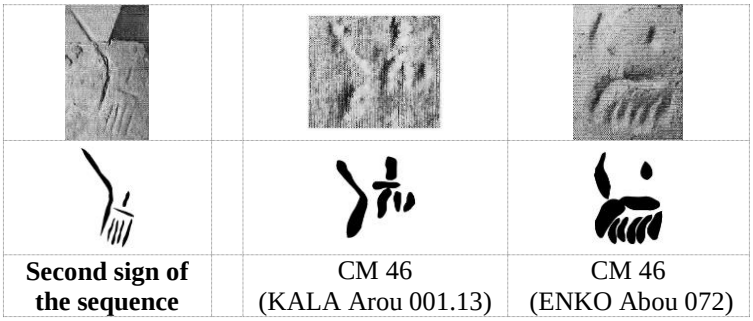
##191. KALA Ppla 001 (*HoChyMin*: 264)

] | 201 →] | **98**

See ENKO Aost 001.

##192. KALA Ppla 002 (*HoChyMin*: 265)

]110-46-110[→]110-**46**-110[



Second sign of the sequence	CM 46 (KALA Arou 001.13)	CM 46 (ENKO Abou 072)

The second sign can be read as CM 46. A very similar variant is even attested in another inscription from Kalavasos (KALA Arou 001.013).

[1230] Drawing from É. and O. Masson (1983: 412, fig. 6).

##193. CYPR? Psce 001 (*HoChyMin*: 266)

82-25-82 | 70-<u>69</u>-23[(impression) or]23-<u>69</u>-70 | 82-25-82 (seal)

In *HoChyMin* only the reading in impression is given.

##194. CYPR? Psce 002 (*HoChyMin*: 267)

68-12 | 30-110 → <u>68</u>-12 | 30-110 (impression) or 110-30 | 12-<u>68</u> (seal)

In *HoChyMin* only the reading in impression is given.

##195. CYPR? Psce 003 (*HoChyMin*: 268)

102-04

##196. CYPR? Psce 004 (*HoChyMin*: 269)

••-••-67-05 → **<u>09</u>**-**<u>55</u>**-**<u>67</u>**-05

			
<u>09</u>	**<u>55</u>**	**<u>67</u>**	**05**

	
	
55 (KALA Mbij 001)	55 (KALA Mbij 002)

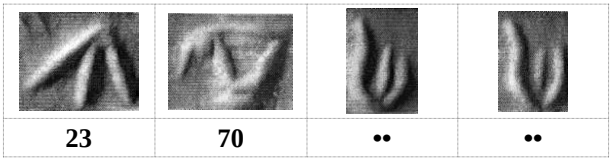
The drawings of the signs are from O. Masson (1957b: 11, fig. 5). The second sign resembles the early variants of CM 55 engraved on metal in KALA Mbij 001 and 002. The atypical shape of the third sign advises caution on its reading as CM 67. Perhaps it is an early form, as in the case of the second sign.

##197. CYPR? Psce 005 (*HoChyMin*: 270)

108-<u>99</u>-23

##198. CYPR? Psce 006 (*HoChyMin*: 271)

15-70(-)••-••
→ **23**-70(-)••-•• (impression) / ••-••(-)70-**23** (seal)



23	**70**	••	••

The illustrations and reading given in *HoChyMin* follow the direction in impression. Regarding the first sign (last if read on the seal), Olivier writes "15", evidently a *lapsus calami* for the correct reading: CM 23. The repeated signs in final position have no straightforward parallel in the signary of Cypro-Minoan (CM 61?) and may not be actual writing.

##199. **ENKO Psce 001** (*HoChyMin*: 272–273)

.01 23-73-••
.02 27

→ 23-73-•• (impression) / ••-73-23 (seal)

##200. **ENKO? Psce 002** (*HoChyMin*: 274)

06-23

Based only on the drawing by O. Masson given in *HoChyMin*, but it seems like the reading poses no problems.

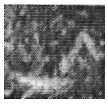
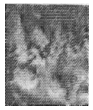
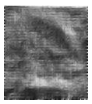
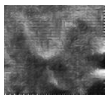
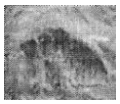
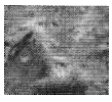
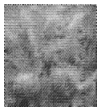
##201. **HALA Psce 001** (*HoChyMin*: 275)

53-87-33 82-••

→

Impression:
.01 53-87-23/33(-)82-••
.02 104-97 (downward)

Seal:
.01 ••-82(-)23/33-87-53
.02 104-97 (downward)

Photograph of seal in *HoChyMin*					
Drawing by E. Porada					
Photograph of impression in *HoChyMin*					
Drawing by J. Smith	—				
Author's drawing based on photographs	—				
Sign	••	**82**	**23**/**33**	**87**	**53**

The two extant drawings are based on impressions, but the one by Porada shows more detail. Smith does not represent the sixth sign. For the first sequence, the readings of the first two signs are supported by all photographs and drawings available.

Drawing by E. Porada		
Drawing by J. Smith		
Sign	**104**	**97**

HoChyMin has no photograph for the second string of text. Both drawings agree as per the second sign being CM 97, but for the first only Smith's drawing implies CM 104. Therefore, I remain cautious about the latter.

##202. **KOUR Psce 001** (*HoChyMin*: 276)

27-13-110-97-23 → 27-**08**-110-97-23

##203. **PARA Psce 001** (*HoChyMin*: 277)

44-04-08-69 → 44-04-**13**-69

##204. **PYLA Psce 001** (*HoChyMin*: 278)

23-55-96-30 (impression) → 23-55-**96**-30 (impression) / 30-**96**-55-23 (seal)

		
		
Second sign	CM 96 (ENKO Arou 001.24)	CM 96 (ENKO Abou 013)

The reading of the second sign as CM 96 is not to be doubted.

##205. **SALA Psce 001** (*HoChyMin*: 279)

••-110 (impression) → **41**-110 (impression) / 110-**41** (seal):

		
		
Second sign (seal)[1231]	CM 41 (ENKO Arou 001.10)	CM 41 (IDAL Avas 001)

We have only O. Masson's (1957b: 14, fig. 8) drawing, The second sign is comparable to CM 41 if read on the seal. Masson orientates draws it from the impression, so here I flipped it horizontally so as to be shown as it is on the object.

##206. **PPAP Vsce 001** (*HoChyMin*: 280)

102-••

[1231] Photograph from *CMI* II: 243.

CM 2

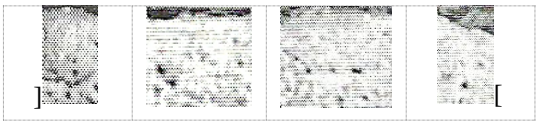
##207. ENKO Atab 002.A.I (*HoChyMin*: 488)

A.I.01–14	*desunt*
A.I.15	]••-••-••-••[
A.I.16	]••-••-••-••-••-••-••-••-••-••-••-••[
A.I.17	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.18	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.19	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.20	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.21	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.22	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.23	••-••-••-••-••-••-••-••-••-••-••-••[
A.I.24	••-••-••-••-••-••-••-••-••] ↓ 23-09 ‖[
A.I.25	••-••-••-••-••-••-••-••]68-64-80 | 25-56-••-••-••[
A.I.26	••-75-62-60-23 | 79-01 | 04-49-24 | 38-24-••-••[
A.I.27	••-05-82 | 12-97 | 79-09-11-75 | 25-06-13 | 21-23-••[
A.I.28	82-97-51 | 38-76 | 110-62 | 104-69-51 | 06-06-10-51-••[
A.I.29	107-11-87 | 38-76-74 | 79-61-06-13 | 110-51-13 | 38-30-51[
A.I.30	102-75-04-54 [↓] 59-75-97-17 | 62-30-96-62 | 17-09-60-59-75 ●
A.I.31	21-05-75 | 79-70 | 10-97-17 | 75-87-59-59 | 79-30-30-05
A.I.32	27-13-21 | 01-28-107-89 | 30-70-87 | 37-64-54-64-70
A.I.33	••-30-110 | 23-51-66 | 102-04 | 23-30-110-95
A.I.34	••-••-••-]••-107-78-05-70 | 62-76 ↓ ••-29-97-51-17 | 21-68-09
A.I.35	••-••-••-••-••-••-]87-70-89[-••-••-••-••-]••-06-90 | 80-21-78
A.I.36	••-••-••-••-••-••-••]••-••-•• | 25-27-90 | 30-61-54-64-69
A.I.37	••-••-••-••-••-••-••]••-••-04-75 | 110-29-17 | 62-17-51-61-95
A.I.38	••-••-••-••-••-••]-••-01 | 24-37-27 | 38-82-61-95
A.I.39	••-••-••-••-••-••-••-]••-••-25 | 79-01-59 | 47-30-107-09-69
A.I.40	••-••-••-••-••-••]••-••-75-29 | 110-82-13 | 56-23-90-75 ●
A.I.41	••-••-••-••-••-••]••-••-69 | 21-78-97-17 | 54-64-27-89
A.I.42	••-••-••-••-••-••-••-••]••-04-35-69 ↓ 38-110-09 | 62-91-69
A.I.43	••-••-••-••-••-••-••-••-••-••]••-•• | 102-75-78 | 79-05-61-09

Observations and corrections:

A.I.24

]¦ 23-09 ¦[



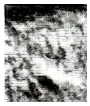
The photographs given are too bright and do not show anything clearly.

A.I.25

]68-64-80 →]68-**65**-80

A.I.26

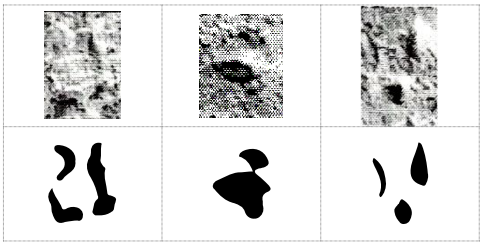
••-75-62-60-23

Photograph (*HoChyMin*)					
Author's drawing	—	—	—		—

The photographs of all signs except the penultimate are not very helpful.

A.I.27

••-05-82 → **59**-05-**82**



The first sign is difficult, but CM 59 is a strong possibility. É. Masson drew a sign shaped like CM 82, but this is not what is visible in the photograph. The reading of the second sign is likely but cannot be confirmed. The reading of the third is confirmed by the photograph.

25-06-13 → 25-06-**08**

A.I.28

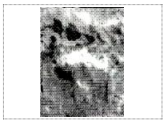
82-97-51 → 82-97-**82**

Last sign of the sequence	CM 51 (A.I.29)	CM 82 (A.I.38)

Olivier admits CM 82 as a possibility, while prefering a doubtful CM 51. The drawing and photograph also point to CM 82. The photograph suggests a single and vertical lower stroke, which is consistent with CM 82.

A.I.29

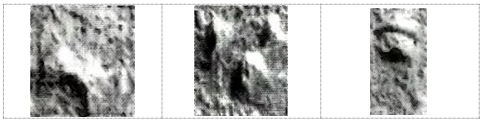
107-11-87 → **107**-11-87



The first sign is slightly damaged, but the photograph shows traces of the four upper strokes that are diagnostic of CM 107 and exclude 104. The sequence 107-11-87 is attested in ENKO Atab 002.B.I.10 and 003.B.18.

79-61-06-13 → 79-61-06-**08**

110-51-13 → 102/110-51-**08**



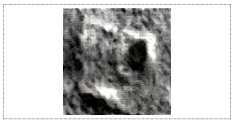
The presumable CM 110 appears too damaged to be distinguished from CM 102. The vertical stroke of sign CM 08 is not visible in the photograph, but the two upper parallel horizontal strokes are a diagnostic trait of CM 08.

38-30-51[→ 38-**30**-51[

The photograph corroborates the reading of the second sign: one upper stroke and three lower ones are visible, and only sign CM 30 matches those traits.

A.I.30

62-<u>30</u>-96-62 → 62-<u>30</u>-96-**<u>62</u>**:



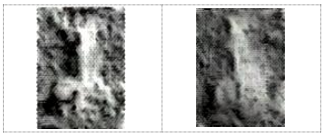
For the last sign, CM 87 or even CM 89 cannot be excluded. Hence its reading as 62 should not be considered too secure.

<u>17</u>-09-60-59-75 → **17**-09-60-59-75

The reading of the first is secure.

A.I.31

79-<u>30</u>-<u>30</u>-05 → 79-**30**-**30**-05



Both instances of sign CM 30 are secure.

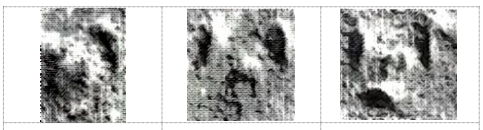
A.I.32

27-13-21 → 27-**08**-21

37-64-54-64-70 → 37-**65**-54-**65**-70

A.I.33

<u>23</u>-51-66 → **23**-51-**<u>66</u>**/**<u>65</u>**:

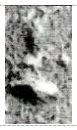


23	51	<u>66</u>/<u>65</u>

The first sign seems secure (compare 23-30-110-95 in the same line). Sign 66 is a *hapax* identical to 65 except for an extra upper right stroke (very thin) and quite likely it the latter is actually unintended.

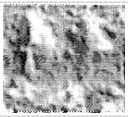
A.I.34

21-<u>68</u>-<u>09</u> → 21-**09**-**09**:

			
Second sign	**Third sign**		CM 09 (B.I.06)

It is clear from the photographs that the last two signs are both 09, as they consist of one vertical stroke on the top of two horizontal ones (for a parallel for the first of them, compare 47-30-107-09-69 in 002.B.I.06).

80-21-78 → **<u>80</u>**-21-78



The photograph shows that the first sign is shaped with two parallel vertical strokes, each of them topped by an extra stroke, which makes it inconsistent with sign cm 80. Signs CM 79 and 81 seem to be possibilities as well.

A.I.36

30-<u>61</u>-54-64-69 → 30-<u>61</u>-54-**65**-69

A.I.37

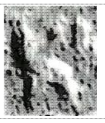
62-17-51-61-<u>95</u> → 62-17-51-61-**95**

			
Last sign of the sequence			CM 95 (A.I.38)

The last sign is not doubtful (for the same ending cf. 38-82-61-95 at the end of the next line).

A.I.39

47-30-107-09-69 → 47-30-**<u>107</u>**-09-69

	
Third sign (in full)	**Third sign (detail of the upper left portion)**

There is a chance the third sign is CM 104 (compare 104-69-51 in A.I.28) and not CM 107. The alledged second stroke of the four superior ones actually overlaps the first stroke, as if originally there were only three as in CM 104. This can be explained in two ways: either the fourth stroke was added to stress the sign or it was meant to correct CM 104 to 107. CM 107 is preferable because of the occurrence of 47-30-107-09-69 in 002.B.I.06.

A.I.40

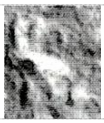
]••-••-75-29 | 110-82-13 →]••-••-75-29 | 110-82-**08**

A.I.41

54-64-27-89 → 54-**65**-27-89

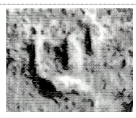
A.I.42

38-110-09 → 38-**107**-09



The photograph recommends É. Masson's reading of the second sign as a damaged CM 107 rather than Olivier's doubtful CM 110. Three superior strokes are visibly preserved in a position that leaves space for a fourth one, whereas below there are two strokes, besides what appears to be an accidental third one in their middle.

62-91-69 → 62-**87**-69

		
Second sign of the sequence		CM 87 (A.I.38)

This single presumable occurrence of CM 91 in CM 2 depends, as Olivier emphasizes, on the short vertical stroke to the left of the sign being accidental, which is the only thing that would exclude CM 87. An enhancement of the photograph is sufficient to show that there is nothing in the sign that makes it unlike other instances of CM 87 (compare e.g. 27-87-27 in B.I.08).

Critical re-edition of ENKO Atab 002.A.I

N.B.: Lines A.I.15-23/24 correspond to side A of fragment 1139 (= ENKO Atab 002b).

A.I.01–14	*desunt*
A.I.15	]••-••-••-••[
A.I.16	]••-••-••-••-••-••-••-••-••-••-••-••-••[
A.I.17	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.18	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.19	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.20	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.21	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.22	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••
A.I.23	••-••-••-••-••-••-••-••-••-••-••[
A.I.24	••-••-••-••-••-••-••-••-••] ↓ 23-09 ↓[
A.I.25	••-••-••-••-••-••-••-••]68-65-80 | 25-56-••-••-••[
A.I.26	••-75-62-60-23 | 79-01 | 04-49-24 | 38-24-••-••[
A.I.27	59-05-82 | 12-97 | 79-09-11-75 | 25-06-08 | 21-23-••[
A.I.28	82-97-82 | 38-76 | 110-62 | 104-69-51 | 06-06-10-51-••[
A.I.29	107-11-87 | 38-76-74 | 79-61-06-08 | 102/110-51-08 | 38-30-51[
A.I.30	102-75-04-54 [↓] 59-75-97-17 | 62-30-96-62 | 17-09-60-59-75 ●
A.I.31	21-05-75 | 79-70 | 10-97-17 | 75-87-59-59 | 79-30-30-05
A.I.32	27-08-21 | 01-28-107-89 | 30-70-87 | 37-65-54-65-70
A.I.33	••-30-110 | 23-51-66/65 | 102-04 | 23-30-110-95
A.I.34	••-••-••-]••-107-78-05-70 | 62-76 ↓ ••-29-97-51-17 | 21-09-09
A.I.35	••-••-••-••-••-••-]87-70-89[-••-••-••-••-]••-06-90 | 80-21-78
A.I.36	••-••-••-••-••-••-••]••-••-•• | 25-27-90 | 30-61-54-65-69
A.I.37	••-••-••-••-••-••-••]••-••-04-75 | 110-29-17 | 62-17-51-61-95
A.I.38	••-••-••-••-••-••]-••-01 | 24-37-27 | 38-82-61-95
A.I.39	••-••-••-••-••-••-••-]••-••-25 | 79-01-59 | 47-30-107-09-69
A.I.40	••-••-••-••-••-••]••-••-75-29 | 110-82-08 | 56-23-90-75 ●
A.I.41	••-••-••-••-••-••]••-••-69 | 21-78-97-17 | 54-65-27-89
A.I.42	••-••-••-••-••-••-••-••]••-04-35-69 ↓ 38-107-09 | 62-87-69
A.I.43	••-••-••-••-••-••-••-••-••-••]••-•• | 102-75-78 | 79-05-61-09

##207. ENKO Atab 002.A.II (*HoChyMin*: 488)

	sup. mut.
ca. A.II.01–30	*desunt*
A.II.31	••[
A.II.32	44-••[
A.II.33	44-75-09[
A.II.34	25-95 | 24[
A.II.35	04-75 | 47[
A.II.36	107-51 | 87-••[
A.II.37	69-70-64 | 12-••[
A.II.38	38-82 | 27-51-••[
A.II.39	27-08-110-••-••-72[
A.II.40	52-30 | 62-09-47[
A.II.41	78-05-70 | 82[
A.II.42	102-27-82 | 79[

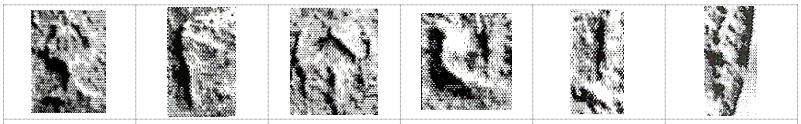
Observations and corrections:

A.II.37

69-70-64 → 69-70-**65**

A.II.39

27-08-110-••-••-72[→ 27 | 110-••-**59**/**09**-••[

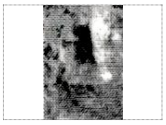


27		110	••	**59**/**09**	••[

For the second sign, the photograph shows only one vertical stroke (whereas the drawing given in *HoChyMin* shows four strokes resembling a damaged CM 97). Although dividers are usually shorter strokes, it is tempting to read this as a divisive line because the next following sign is the mostly initial CM 110. Whatever might be the case, Olivier's single and doubtful instance of CM 08 (which in his sign-list corresponds to CM 13) is to be abandoned.
É. Masson reads the fourth sign as CM 60 (𓎼) whereas Olivier proposes a doubtful CM 44 (𓎭); the photograph is not too elucidative and CM 87 (𓏏) is perhaps also possible. It seems safer to leave the sign untranscribed.
For the fifth sign the image shows little detail around so it is difficult to decide if it could be only a damaged CM 59 (𓎻) as proposed by É. Masson or a damaged CM 09 (𓎹), which according to Olivier is a possibility.
The sixth and last sign is too fractured according to the photograph, whereas the drawing provided suggests a broken CM 72 (𓎾) in the drawing; to increase doubts further, É. Masson reads CM 69 (𓎽). I leave it untranscribed as well.

A.II.40

62-09-47 → 62-**09**-47[



For the second sign, the reading as CM 09 (𓎹) is safe. The photograph shows a somewhat long vertical stroke on the top of a horizontal one and, below, traces of a second horizontal stroke are visible.

Critical re-edition of ENKO Atab 002.A.II

	sup. mut.
ca. A.II.01–30	*desunt*
A.II.31	••[
A.II.32	44-••[
A.II.33	44-75-09[
A.II.34	25-95 | 24[
A.II.35	04-75 | 47[
A.II.36	107-51 | 87-••[
A.II.37	69-70-65 | 12-••[
A.II.38	38-82 | 27-51-••[
A.II.39	27 | 110-••-59/09-••[
A.II.40	52-30 | 62-09-47[
A.II.41	78-05-70 | 82[
A.II.42	102-27-82 | 79[

##207. ENKO Atab 002.B.I (*HoChyMin*: 490)

B.I.01	••-••-••-••-••-••-••-••-••]104-11-24 | 23-64-27-80 | 102-35-75-82
B.I.02	••-••-••-••-••-••-••-••]••-29-23-92-97 | 102-25-13 | 102-75-27-69
B.I.03	••-••-••-••-••-••-••-••-••-••-••]87-75 | 38-17-17 | 107-33-72-27
B.I.04	••-••-••-••-••-••-••-••-••-••]••-••-••-••-44-75 | 51-33-47-49-75
B.I.05	••-••-••-••-••-••]•• | 79-74-64-75 | 21-69-17 | 62-70 | 09-107
B.I.06	••-••-••-••-••]••-••-••-•• | 104-87-82 | 47-30-107-09-69
B.I.07	••-••]••-70 | 12-107-27 | 30-17-17 | 82-29-97 | 79-68-64-69
B.I.08	••-••-••-27-89 | 05-110-27 | 37-69-36 | 27-87-27
B.I.09	79-••-75 | 102-13 | 47-68-60 | 38-87-87-47-95 | 79-76-01
B.I.10	79-70-10-75-09-107 | 107-11-87 | 25-04-09 | 78-25-04-75 ●
B.I.11	09-80-47 | 37-97 | 102-51 | 79-28-51 | 25-54-30-70[
B.I.12	79-27 | 87-68-28-107-36 | 102-35-27 | 27-27 | 30[
B.I.13	78-96-80 | 25-06-82 | 38-12-97-17 | ••[
B.I.14	79-09-44-70 | 82-47-51 | 102-13 | 102[
B.I.15	21-47-70 | 82-29-97 | 06-25 | ••[
B.I.16	21-04-78 | 102-35-96 | 102-76[
B.I.17	79-17-13[
B.I.18	*deest*
B.I.19	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••]••[
B.I.20	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••]••-82-13-76 ● [
B.I.21	••-••-••-••-••-••-••-••-••]52 | 05-107-95 | 23-37[
B.I.22	••-••-••-••-••-••-••-••]52-70 | 102-25-75 | 82-••-••-••[
B.I.23	38-87-87-27 | 38-87-13 | 87-95-75 | 23-69-27
B.I.24	06-82-75 | 27-27 | 25-87-06-90 | 27-09-90 | 82-70-••[
B.I.25	110-37-21-17-23 | 102-35-87-70 | 104-87-82 | 04-••[
B.I.26	27-09 | 107-12-33-25 | 104-09-76-104-70-27-21 | ••[
B.I.27	62-33-75 | ••-90-69 | ••-••-••[
B.I.28	••-••-••-••]••[
	inf. mut.

Observations and corrections:

B.I.01

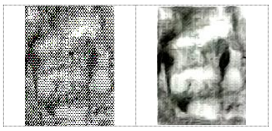
23-**64**-27-80 → 23-**65**-27-80:

B.I.02

102-25-**13** → 102-25-**08**

B.I.03

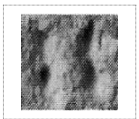
107-33-72-27 → 107-33-**70**-27



The upper stroke of the third sign, placed on the top to the right, is consistent with sign 70 (𓂧), not 72 (𓂩).

B.I.04

51-33-47-49-75 → 51-33-47-**52**-75



Fourth sign

This is clearly sign CM 52 (𓌳), not CM 49 (𓌶).

B.I.05

79-74-64-75 → 79-74-**65**-75

B.I.07

79-68-64-69 → 79-68-**65**-69

B.I.09

102-13 → 102-**08**.

B.I.14

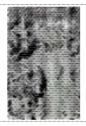
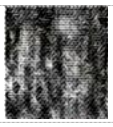
102-13 → 102-**08**.

B.I.17

79-17-13[→ 79-17-**08**[

B.I.20

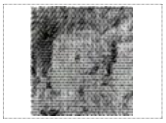
]••-82-13-76 ●[→]••-82-**08**-76(-)●[

						
]	••	82	08	76	●	[

The reading of CM 82 seems secure. The fourth sign is most likely CM 76 (𒄩), but CM 70 and 97 are not impossible. The photograph does not allow to confirm the last sign as a stictogram, so a phonetic grapheme is not excluded.

B.I.22

102-25-75 → 102-25-**75**



The reading of the third sign as CM 75 (𒅆) is not doubtful.

B.I.23

38-87-13 → 38-87-**08**

Last sign

The reading of last sign (𒀀𒀭) is corroborated by the photograph.

23-69-27 → **23**-69-27

First sign

The reading as CM 23 (𓃀) is not doubtful.

B.I.24

27-<u>09</u>-90 → 27-**09**-90

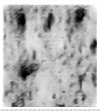
The reading of the second sign is confirmed by the photograph, where it is visible that it consists of a vertical stroke on the top of two horizontal ones (𓏲).

B.I.26

<u>107</u>-12-33-25 → **104**-12-33-25

First sign of the sequence

CM 104 (B.06)



CM 104 (B.26)

CM 107 (B.10)

The photograph of the first sign shows only three upper vertical strokes, and not four. This is a diagnostic feature of CM 104 (𓅱).

Critical re-edition of ENKO Atab 002.B.I

N.B.: Lines B.I.19-28 correspond to side B of fragment 1139 (= ENKO Atab 002b).

B.I.01	••-••-••-••-••-••-••-••]104-11-24 | 23-65-27-80 | 102-35-75-82
B.I.02	••-••-••-••-••-••-••-••]••-29-23-92-97 | 102-25-08 | 102-75-27-69
B.I.03	••-••-••-••-••-••-••-••-••-••]87-75 | 38-17-17 | 107-33-70-27
B.I.04	••-••-••-••-••-••-••-••-••-••]••-••-••-••-44-75 | 51-33-47-49-75
B.I.05	••-••-••-••-••-••]•• | 79-74-65-75 | 21-69-17 | 62-70 | 09-107
B.I.06	••-••-••-••-••]••-••-••-•• | 104-87-82 | 47-30-107-09-69
B.I.07	••-••]••-70 | 12-107-27 | 30-17-17 | 82-29-97 | 79-68-65-69
B.I.08	••-••-••-27-89 | 05-110-27 | 37-69-36 | 27-87-27
B.I.09	79-••-75 | 102-08 | 47-68-60 | 38-87-87-47-95 | 79-76-01
B.I.10	79-70-10-75-09-107 | 107-11-87 | 25-04-09 | 78-25-04-75 ●
B.I.11	09-80-47 | 37-97 | 102-51 | 79-28-51 | 25-54-30-70[
B.I.12	79-27 | 87-68-28-107-36 | 102-35-27 | 27-27 | 30[
B.I.13	78-96-80 | 25-06-82 | 38-12-97-17 | ••[
B.I.14	79-09-44-70 | 82-47-51 | 102-08 | 102[
B.I.15	21-47-70 | 82-29-97 | 06-25 | ••[
B.I.16	21-04-78 | 102-35-96 | 102-76[
B.I.17	79-17-08[
B.I.18	*deest*
B.I.19	••-••-••-••-••-••-••-••-••-••-••-••-••-••-••-••]••[
B.I.20	••-••-••-••-••-••-••-••-••-••-••-••-••-••]••-82-**08**-76(-)●[
B.I.21	••-••-••-••-••-••-••-••]52 | 05-107-95 | 23-37[
B.I.22	••-••-••-••-••-••-••-••]52-70 | 102-25-75 | 82-••-••-••[
B.I.23	38-87-87-27 | 38-87-08 | 87-95-75 | 23-69-27
B.I.24	06-82-75 | 27-27 | 25-87-06-90 | 27-09-90 | 82-70-••[
B.I.25	110-37-21-17-23 | 102-35-87-70 | 104-87-82 | 04-••[
B.I.26	27-09 | 104-12-33-25 | 104-09-76-104-70-27-21 | ••[
B.I.27	62-33-75 | ••-90-69 | ••-••-••[
B.I.28	••-••-••-••]••[
	inf. mut.

##207. ENKO Atab 002.B.II (*HoChyMin*: 490)

B.II.01	04-13 |
B.II.02	79-36-••[
B.II.03	81-10-12[
B.II.04	74-47-••[
B.II.05	38-96-••[
B.II.06	81-70 ‖[
B.II.07	47-107-••[
B.II.08	110-51-••[
B.II.09	104-06-89[
B.II.10	••-••[

Observations and corrections:

B.II.01

04-**13** → 04-**08**

B.II.03

81-10-**12**[→ 81-10-**17**[

The last sign is rather consistent with a damaged 17, since the smaller stroke to the right does not depart from the upper edge of the longer stroke.

B.II.06

81-70

The photograph of first sign is not shown in the edition of *HoChyMin*.

Critical re-edition of ENKO Atab 002.B.II

B.II.01	04-08 |
B.II.02	79-36-••[
B.II.03	81-10-17[
B.II.04	74-47-••[
B.II.05	38-96-••[
B.II.06	81-70][
B.II.07	47-107-••[
B.II.08	110-51-••[
B.II.09	104-06-89[
B.II.10	••-••[

##208. ENKO Atab 003.A (*HoChyMin*: 493)

A.01	104-60-33 | 24-70 | 52-30-21 | 56-••[
A.02	102-75-54 | 102-29-17-17 | 87-90-44-••[
A.03	79-37-82-97 | 25-09-49-28-95 | 70-68-70-78[
A.04	102-75 | 06-49-33-35-54 | 30-21-05-75-64][
A.05	102-28-54 | 38-33-51 | 38-33 | 04-25-51-13 | 17[
A.06	••-74-87 | 104-23 | 79-52-64-75 | 21-35 | 30-21-96-••[
A.07	[••]-09-27-69 | 102-04-75 | 62-10-51-13 | 38-97-96-••[
A.08	[••-••] | 52-30-62-13 | 38-33-51 | 04-25 | 62-96-69-82[
A.09	••-97-97 | 79-56-49-54 | 21-96-69-64 | 23-37-27[
A.10	102-75 | 25-09-49-28-95 | 110-60 | 28-21-17 | 62-05-60-54[
A.11	72-54 | 38-33-51 | 110-78-13 | 102-75-04 | 47-96-27-69
A.12	23-62-17 | 87-51-09-82 | 56-09 | 102-75-54 | 04-25-74-54
A.13	87-56 | 25-87-59-89 | 79-56 | 47-17-97-17 | 25-27-69-09-69
A.14	04-25-74-95 | 82-87 | 110-74-21 | 102-75-04 | 47-33-54
A.15	30-52-05 | 102-25-75 | 110-76-70 | 68-25-97-17 | 30-06-04-75
A.16	68-62-09 | 62-64 | 38-76 | 25-06-64 | 102-62-82
A.17	54-76-33 | 38-24-80 | 102-35-96 | 27-69-17 | 70-27-05-61-95
A.18	56-96-44 | 102-75 | 110-35-05-17 | 107-75-75 | 102-82-37-05
A.19	107-30-95 | 107-17-75-13 | 38-33-51-13 | 04-96 | 27-51
A.20	107-82-82 | 25-90 | 104-56-05 | 87-72 | 44-75-33 ●
A.21	••-90-23-80-•• | 79-13 | 21-72-96 | 82-09-107-17
A.22	]33-78 | 102-35-82[*inf. mut.*

Observations and corrections:

A.04

30-21-05-75-64 → 30-21-05-75-**65**

A.05

04-25-51-13 → 04-25-51-**08**

A.06

79-52-64-75 → 79-52-**65**-75

A.07

62-10-51-13 → 62-10-51-**08**

A.08

52-30-62-13 → 52-30-62-**08**

A.09

21-96-69-64 → 21-96-69-**65**

A.10

62-05-60-54[→ 62-05-60-**54**[

Last sign

The reading is secure.

A.11

110-78-13 → 110-78-**08**

A.16

62-64 → 62-**65**

25-06-64 → 25-06-**65**

A.19

107-17-75-13 → 107-17-75-**08**

38-33-51-13 → 38-33-51-**08**

A.21

••-90-23-80-••

90

What is preserved of the second sign is consistent only with 89/90.

79-13 → 79-**08**

82-09-107-17

			
Last sign of the sequence	CM 17 (A.10)	CM 17 (A.17)	CM 17 (A.02)

Only CM 87 would be an alternative for the last sign, but since it is damaged in its lowermost portion it is impossible to ascertain whether it possessed a lower horizontal stroke. However, we may suspect it did not, since the vertical stroke is too close to the inverted U shape, leaving little room for one at the bottom.

Critical re-edition of ENKO Atab 003.A

A.01	104-60-33 | 24-70 | 52-30-21 | 56-••[
A.02	102-75-54 | 102-29-17-17 | 87-90-44-••[
A.03	79-37-82-97 | 25-09-49-28-95 | 70-68-70-78[
A.04	102-75 | 06-49-33-35-54 | 30-21-05-75-65][
A.05	102-28-54 | 38-33-51 | 38-33 | 04-25-51-08 | 17[
A.06	••-74-87 | 104-23 | 79-52-65-75 | 21-35 | 30-21-96-••[
A.07	[••]-09-27-69 | 102-04-75 | 62-10-51-08 | 38-97-96-••[
A.08	[••-••] | 52-30-62-08 | 38-33-51 | 04-25 | 62-96-69-82[
A.09	••-97-97 | 79-56-49-54 | 21-96-69-65 | 23-37-27[
A.10	102-75 | 25-09-49-28-95 | 110-60 | 28-21-17 | 62-05-60-54[
A.11	72-54 | 38-33-51 | 110-78-08 | 102-75-04 | 47-96-27-69
A.12	23-62-17 | 87-51-09-82 | 56-09 | 102-75-54 | 04-25-74-54
A.13	87-56 | 25-87-59-89 | 79-56 | 47-17-97-17 | 25-27-69-09-69
A.14	04-25-74-95 | 82-87 | 110-74-21 | 102-75-04 | 47-33-54
A.15	30-52-05 | 102-25-75 | 110-76-70 | 68-25-97-17 | 30-06-04-75
A.16	68-62-09 | 62-65 | 38-76 | 25-06-65 | 102-62-82
A.17	54-76-33 | 38-24-80 | 102-35-96 | 27-69-17 | 70-27-05-61-95
A.18	56-96-44 | 102-75 | 110-35-05-17 | 107-75-75 | 102-82-37-05
A.19	107-30-95 | 107-17-75-08 | 38-33-51-08 | 04-96 | 27-51
A.20	107-82-82 | 25-90 | 104-56-05 | 87-72 | 44-75-33 ●
A.21	••-90-23-80-•• | 79-08 | 21-72-96 | 82-09-107-17
A.22	]33-78 | 102-35-82[*inf. mut.*

##208. ENKO Atab 003.B (*HoChyMin*: 493)

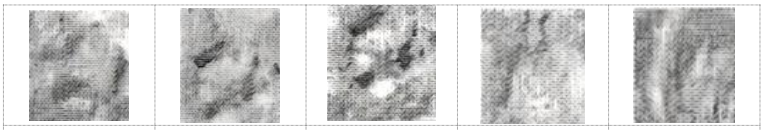
sup. mut.

B.01	]*vestigia*
B.02	]*vestigia*
B.03	]*vestigia*
B.04	]*vestigia*
B.05	]*vestigia*
B.06	]*vestigia*
B.07	]*vestigia*
B.08	]*vestigia*
B.09	]*vestigia*
B.10	]*vestigia*
B.11	••-•• | 102-54-••[ ] *vestigia*
B.12	••-••-•• | 87[ ]62-82 | 23-09-60-59-••[
B.13	••-••-••-••-17[ ]••-27 | ••-•• | 79-95 | 82-87-••-••[
B.14	••-47-21 | 102-••-••-54-75 | 107-56-69 | 82-90 | 107-••-••[
B.15	21-13 | 96-13 | 104-37-82-09 | 110-78 | 87-23 | 79-54-••[
B.16	102-09-54-72-17 | 102-96-62 | 25-04-75 | 23-90-33-27[
B.17	102-56-33-27 | 11-21 | 04-75-29 | 102-82-13 | 47-27-69[
B.18	38-82 | 52-30-21-13 | 107-60 | 107-11-87 | 102-95 | [
B.19	21-47-70 | 21-09-69-23 | 102-35-96 | 23-60-21-••[
B.20	110-04 | 27-30-52 | 30-12-17 | [
B.21	24-09 | 21-60-89-17 | 104-••[
B.22	104-56-13 | 04-75 | 102-••[
B.23	38-27 | 12-61-62 | 70-••[
B.24	06-21 | 96-35 | 06-56 | 44[
B.25	102-54-75-82 | 110-06[
B.26	78-75-75 | 110-62-82[

Observations and corrections:

B.13

••-••-••-••-17[→ **76**-**75**-**75**-••-17[



76	**75**	**75**	••	**17**

The photograph of the first sign appears to show a shape consisting of two squares overlapped obliquely, which is consistent with É. Masson's reading of a doubtful CM 76, reported by Olivier. The second and third signs appear both to be square like 75, as seen in the photographs given. The fourth sign is too difficult (perhaps CM 30?). The last sign does look like 17 and it is not likely to be anything else.

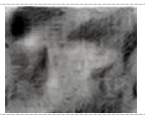
]••-<u>27</u> →]••-**27**

Last sign

The photograph confirms the reading.

B.14

••-<u>47</u>-21 → ••-**47**-21



Second sign

CM 47
(B.17)

The reading is supported by the photograph. Cf. also the drawing made by É. Masson (given in *HoChyMin*: 336). Despite some damaged to the sign, the upper left stroke and the layout of the remaining ones is fully comparable with the instance of CM 47 in 47-27-69[, at the end of line B.17.

<u>102</u>-••-••-<u>54</u>-75 → **102**-••-••-**54**-75

102

••

••

54

75

For the first sign, CM 110 is excluded as an alternative, because the photograph shows that at the center of the upper part of the sign we find only a single stroke. This is diagnostic for CM 102. The second and third signs are difficult. The fourth sign can be confirmed as CM 54 (𒌍). The diagnostic upper right stroke, not present in CM 35 (𒌋𒌋) is visible in the photograph. The last sign is clearly 75, as read by Olivier. The correction proposed here agrees with the original reading of É. Masson (see *HoChyMin*: 336).

107-••-••[→ 107-••-**<u>87</u>**[

Third sign

CM 87
(ENKO Atab 003.A.06)

CM 59 is a possibility for the second sign: the photograph shows clearly a vertical stroke bottomed by a dot and, to the right, traces of a vertical stroke. For the last sign, the photograph shows that CM87 is a strong possibility. If the line visible below is a fracture, rather than a horizontal stroke, then CM 17 has to be considered. This part of

the inscription is severely damaged. For the sequence, compare perhaps 107-11-87 in line B.18.

B.15

21-13 → 21-**08**

96-13→ 96-**08**

104-37-82-09 → 104-37-**28**-09

			
Third sign of the sequence		CM 28 (A.10)	CM 82 (A.12)

As suggested by the photograph, É. Masson's reading of CM 28 for the third sign (see *HoChyMin*: 38) is preferrable to a CM 82, although the latter is not wholly excluded.

B.17

102-82-13 → 102-82-**08**

B.18

52-30-21-13 → 52-30-21-**08**

B.19

102-35-96 → 102-35-**76**

	
Last sign of the sequence (detail)	**Full sequence on the tablet**

					
CM 68 (A.15)	CM 69 (A.13)	CM 75 (B.16)	CM 76 (A.17)	CM 95 (B.13)	CM 96 (B.16)

For the last sign Olivier maintains a doubtful CM 96 whereas É. Masson reads a dubious CM 69. Olivier's preference may have been motivated by the repeated attestation of 102-35-96 in ENKO Atab 002.B.I.156 and 003.A.17.

What is preserved of the sign is a square shape of which the right vertical stroke is shorted than the left one. If we compare all of the signs with similar features in the tablet, see that only CM 75 and 76 exhibit this particular trait. On the other hand, the lateral vertical strokes surpass the upper horizontal one, which is more typical of CM 76. Because the sign probably continued below, where the tablet is damaged (see the full view of the sequence in the photograph above), CM 76 is more likely.

B.22

104-56-13 → 104-56-**08**

Critical re-edition of ENKO Atab 003.B

		sup. mut.
B.01		]*vestigia*
B.02		]*vestigia*
B.03		]*vestigia*
B.04		]*vestigia*
B.05		]*vestigia*
B.06		]*vestigia*
B.07		]*vestigia*
B.08		]*vestigia*
B.09		]*vestigia*
B.10		]*vestigia*
B.11	••-•• | 102-54-••[	] *vestigia*
B.12	••-••-•• | 87[	]62-82 | 23-09-60-59-••[
B.13	76-75-75-••-17[	]••-27 | ••-•• | 79-95 | 82-87-••-••[
B.14	••-47-21 | 102-••-••-54-75 | 107-56-69 | 82-90 | 107-••-87[	
B.15	21-08 | 96-08 | 104-37-28-09 | 110-78 | 87-23 | 79-54-••[	
B.16	102-09-54-72-17 | 102-96-62 | 25-04-75 | 23-90-33-27[	
B.17	102-56-33-27 | 11-21 | 04-75-29 | 102-82-08 | 47-27-69[	
B.18	38-82 | 52-30-21-08 | 107-60 | 107-11-87 | 102-95 | [	
B.19	21-47-70 | 21-09-69-23 | 102-35-76 | 23-60-21-••[	
B.20	110-04 | 27-30-52 | 30-12-17 | [	
B.21	24-09 | 21-60-89-17 | 104-••[	
B.22	104-56-08 | 04-75 | 102-••[	
B.23	38-27 | 12-61-62 | 70-••[	
B.24	06-21 | 96-35 | 06-56 | 44[	
B.25	102-54-75-82 | 110-06[	
B.26	78-75-75 | 110-62-82[	

##209. ENKO Atab 004.A.I (*HoChyMin*: 496)

lat. sup.	25-21-13 | 04-82 | 27-51 | 68-25-96
A.I.1.01	••-••[••]110-70 | 27-••
A.I.1.02	••-••]33-95[••]••[••-••
A.I.1.03	38-]64 | 79-37-107 | 30-44-33-70
A.I.2.01	102-38-95-51 | 04-••[••]| 27-27[
A.I.2.02	68-82-28-95 | 38-64 | 79-37-107[1232]
A.I.2.03	30-44-33-70
A.I.3.01	102-68-95[••]••-••-96 | 38-68-96
A.I.3.02	30-44-33-70 | 38-64 | 79-37-107
A.I.4.01	23-09-27[••-••-••-••]| 104-110-95
A.I.4.02	38-64 |[79-37-107]| 30-44-33-70
A.I.5.01	38-25[••-••]29-64 | 12-92-38[
A.I.5.02	68-82-28-95 | 30-44-33-70 | 38-64
A.I.5.03	79-37-107
A.I.6.01	••-107-82 | 62-64 | 68-82-28-95
A.I.6.02	30-44-33-70 | 38-64 | 79-37-107
A.I.7.01	••[••]| 09-87-61 | 82-47-70-••
A.I.7.02	30-44-33-70 | 38-64 | 79-37-107
A.I.8.01	••-••-••-••]••-30-95 | 82-23-••
A.I.8.02	••-••-••-••]| 104[
A.I.8.03	]••[
	inf. mut.

Observations and corrections:

Lat.sup.

25-21-13 → 25-21-**08**

A.I.1.03

79-37-107 → 79-37-**107**

[1232] The reading of the first sign does not appear underlined in Olivier's final edition of the text, but the character is damaged and is doubtful in Olivier's opinion (*HoChyMin*: 351).

		
Last sign		CM 107 (B.06)

The photograph supports the reading of the last sign. Traces of four upper strokes and two lower ones are visible, which is consistent with CM 107. The sequence is moreover much repeated in the text.

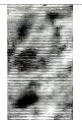
30-44-33-70 → **30**-44-33-70:

		
		
First sign		CM 30 (B.19)

The reading of the first sign is confirmed by the photograph.

A.I.2.01

27-27[•• → 27-**10**[••:

  [	
27	**10[**

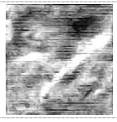
The reading of the first sign is confirmed, but the second sign looks rather like CM 10.

A.I.2.02

38-64 → 38-**65**

A.I.2.03

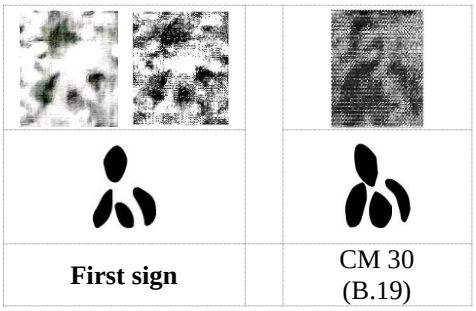
30-44-33-70 → 30-44-**33-70**

	
Third sign	**Fourth sign**

The photographs corroborate the readings of the last two signs as CM 33 (𓄿) and 70 (𓂻), respectively.This is most probably yet another repetition of the sequence 𓄤𓇋𓄿𓂻 → 30-44-33-70.

A.I.3.02

30-44-33-70 → **30**-44-33-70



First sign		CM 30 (B.19)

The photographs support the readings of the first sign as CM 30 (𓄤).

38-64 → 38-**65**

A.I.4.01

23-09-27[→ 23-**09**-**10**[

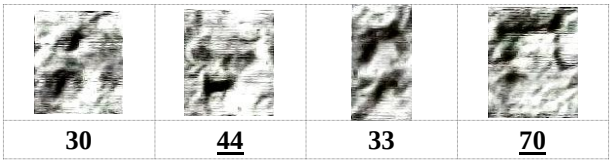
Second sign	**Third sign** [

The second sign can be CM 09 (𓁹) or 10 (𓁺), but the apparent damage on the upper part makes it difficult to be certain. The third sign looks more like CM 10 than CM 27.

A.I.4.02

38-64 → 38-**65**

30-44-33-70 → **30**-44-33-70



30	**44**	**33**	**70**

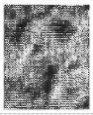
The photographs support the readings of the first sign. The reading of the last one also seems secure, but the lower half is badly damaged. This is most probably yet another repetition of the sequence 𓄤𓇋𓄿𓂻 → 30-44-33-70.

A.I.5.01

38-25[••-••]29-64 | → 38-25[••-••]29-**65**

A.I.5.02

68-82-28-95 → 68-82-**28**-95

	
Second sign	**Third sign**

The reading of the third sign as CM 28 (𒊹) seems confirmed, if compared to the preceding one: the orientation of the upper strokes of the latter is inwards, unlike that of the upper strokes of the second sign, CM 82 (𒌅).

38-64 → 38-**65**

62-64 → 62-**65**

A.I.6.02

38-64 → 38-**65**

A.I.7.02

38-64 → 38-**65**

Critical re-edition of ENKO Atab 004.A.I

lat. sup.	25-21-08 | 04-82 | 27-51 | 68-25-96
A.I.1.01	••-••[-••-]110-70 | 27-••
A.I.1.02	••-••]33-95[••]••[••-••
A.I.1.03	38-]65 | 79-37-107 | 30-44-33-70
A.I.2.01	102-38-95-51 ¦ 04-••[••]| 27-10[••
A.I.2.02	68-82-28-95 ¦ 38-65 ¦ 79-37-107
A.I.2.03	30-44-33-70
A.I.3.01	102-68-95[••]••-••-96 | 38-68-96
A.I.3.02	30-44-33-70 | 38-65 | 79-37-107
A.I.4.01	23-09-10[••-••-••-••]| 104-110-95
A.I.4.02	38-65 |[79-37-107]| 30-44-33-70
A.I.5.01	38-25[••-••]29-65 | 12-92-38[
A.I.5.02	68-82-28-95 | 30-44-33-70 | 38-65
A.I.5.03	79-37-107
A.I.6.01	••-107-82 | 62-65 | 68-82-28-95
A.I.6.02	30-44-33-70 | 38-65 | 79-37-107
A.I.7.01	••[••]¦ 09-87-61 | 82-47-70-••
A.I.7.02	30-44-33-70 | 38-65 | 79-37-107
A.I.8.01	••-••-••-••]••-30-95 | 82-23-••
A.I.8.02	••-••-••-••]¦ 104[
A.I.8.03	]••[
	inf. mut.

##209. ENKO Atab 004.A.II (*HoChyMin*: 496)

A.II.1.01	••]••[••-••]••-104-••-••[
A.II.1.02	••-••-••-••]47-95-61-••[
A.II.1.03	104[••-••-••]| 110-78[
A.II.1.04	30-44-33-70 | 38-64[| 79-37-107
A.II.2.01	61-59[••-••]| 110[••
A.II.2.02	••-••]64 | 68-82[-28-95
A.II.2.03	30[-44-]33-70 | 38[-64 | 79-37-107
A.II.3.01	30-107-70-82 |[••]37[
A.II.3.02	09-97 | 30-44-33[-70 | 38-64
A.II.3.03	79-37-107[
A.II.4.01	••-59-61-24 |[
A.II.4.02	37-64 | 38[-64 | 79-37-107
A.II.4.03	30-44-33-70[
A.II.5.01	68-09-69-59[
A.II.5.02	••-70[
A.II.6.01	••-••[
A.II.6.02	••[

inf. mut.

Observations and corrections:

A.II.1.04

38-64[→ 38-**65**[

First sign of the sequence

CM 38
(ENKO Atab 004.B.15)

The first sign is most likely CM 38, but the two lateral strokes on the right appear merged or at least closely drawn, which impedes a secure identification. This would be another repetition of the sequence 𒄩𒌋𒌍 → 38-65.

A.II.2.02

]64 →]**65**

38[-64 → 38[-**65**

A.II.3.02

30-44-33[-70 → 30-**44**-33[-70

Second sign

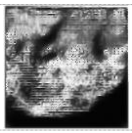
The reading of the second sign as CM 44 (𒄷) seems certain.

A.II.4.02

37-64 → 37-**65**

A.II.5.01

68-09-69-59[→ 68-09-69-**59**[



Fourth sign

CM 59
(ENKO Atab 004.B.12)

The reading of the last sign is confirmed by the enhancement of the photograph.

Critical re-edition of ENKO Atab 004.A.II

A.II.1.01	••]••[••-••]••-104-••-••[
A.II.1.02	••-••-••-••]47-95-61-••[
A.II.1.03	104[-••-••-••]¦ 110-78[
A.II.1.04	30-44-33-70 | 38-65[| 79-37-107
A.II.2.01	61-59[-••-••]| 110[••
A.II.2.02	••-••-]65 | 68-82[-28-95
A.II.2.03	30[-44-]33-70 | 38[-64 | 79-37-107
A.II.3.01	30-107-70-82 ‖[••]37[
A.II.3.02	09-97 ¦ 30-44-33[-70 | 38-65
A.II.3.03	79-37-107[
A.II.4.01	••-59-61-24 ‖[
A.II.4.02	37-65 | 38[-65 | 79-37-107
A.II.4.03	30-44-33-70[
A.II.5.01	68-10-69-59[
A.II.5.02	••-70[
A.II.6.01	••-••[
A.II.6.02	••[

inf. mut.

##209. ENKO Atab 004.B (*HoChyMin*: 497)

	sup. mut.
B.00	]••-••-••[
B.01	06-]06-82 | 06[••-••-••-••-••]54 | 68-25[
B.02	06-06-82 | 06-09-06-107 | 104-24 | 62-76-••[
B.03	06-06-82 | 06-09-06-107 | 104-24 | 06-06-78[
B.04	102-64-24 | 104-92-09-60-59 [
B.05	82-24-69 | 104-92-09-60-59 | 28-110[
B.06	06-06-82 | 79-09-54-107 | 38-24 | 54-59[
B.07	75-76-74 | 47-47-60-59 | 102-70-••-••[
B.08	102-25-75-96 < | > 89-24 | 30-70-17-23 | 102[
B.09	25-25 | 104-09-90 | 110-78-23 | 06-06 | 107[
B.10	68-25-97 | ••-54-05-60-90 | 102-82-107-78[
B.11	102-13-13 | 68-25-75 | 82-23 | 102-61-21-••[
B.12	82-25-75-59 | 37-64-51 | 62-21-24-54[
B.13	107-06-06-90-13 | 102-49-80 | 47-70 | 04[
B.14	82-25-75-59 | 38-17 | 38-12-97 | 82-05-24-••[
B.15	102-76-35 | 78-95-33-35 | 38-17-59[
B.16	38-61-44-35 | 38-17-62 | 102-60-27 | 95[
B.17	102-76-29-13 | 68-25-33-25 | 102-87-59[
B.18	25-06-04 | 44-47-95-75 | 04-75-35 | 49-44[
B.19	30-70-64 | 102[••-••]17-95-05-27-107
B.20	25-06-04 | 44-47-95-75 | 04-75-35 | 56-47[
B.21	102-04-87[••-••-••]95 | 04-76-54-64 | 54[
B.22	21-78-51 | 44-61-09 | 25-54-47-60-59 | 44-78[

Observations and corrections:

B.03

06-06-<u>78</u> → 06-06-**<u>29</u>**[

			
Third sign of the sequence		CM 29 (B.17)	CM 78 (B.15)

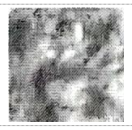
The third sign is more alike 29 than 78, as shows a comparison with the instances of these signs elsewhere in the text. The upper stroke of sign 78 appears to be longer.

B.04

<u>102</u>-<u>64</u>-<u>24</u> → <u>102</u>-**<u>65</u>**-<u>24</u>

B.06

<u>38</u>-24 → **104**-24

			
First sign of the sequence		CM 104 (B.02)	CM 104 (B.04)

Based on the photograph, the first sign is to be read as CM 104. It compares well with secure instances of the latter. Note also that the sequence 104-24 occurs two other times, in lines B.02 and 03.

B.11

102-13-13 → 102-**08-08**

B.12

37-<u>64</u>-51 → 37-**<u>65</u>**-51

<u>62</u>-21-24-<u>54</u>[→ **62**-21-24-<u>54</u>[

			
First sign of the sequence		CM 62 (B.02)	

The reading is secure.

B.13

107-06-06-90-13 → 107-06-06-90-**08**

B.17

102-76-29-13 → 102-76-29-**08**

B.19

30-<u>70</u>-64 → 30-<u>70</u>-**65**

B.20

04-75-35

			
Photograph of the third sign in *HoChyMin*			
		CM 54 in sequence 04-76-54-65 (B.21)	
Drawing of the third sign in É. Masson (1978a: 61, fig. 7)			

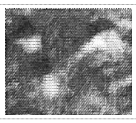
In *HoChyMin* the photograph given for the third sign is, by *lapsus*, that of sign CM 54 in the sequence 04-76-54-65 (B.21). The full photograph of the tablet and the drawing of É. Masson (1978a) demonstrate that what we have here is actually CM 35, which is also consistent with the reading given in *HoChyMin*.

B.21

04-76-54-64 → 04-76-54-**65**

B.22

25-54-47-60-59 → 25-**54**-47-60-59



Second sign

The second sign is damaged, but the curved upper right stroke is a diagnostic trait of CM 54, so the reading is secure.

Critical re-edition of ENKO Atab 004.B

	sup. mut.
B.00	]••-••-••[
B.01	06-]06-82 | 06[••-••-••-••-••]54 | 68-25[
B.02	06-06-82 | 06-09-06-107 | 104-024 | 62-76-••[
B.03	06-06-82 | 06-09-06-107 | 104-024 | 06-06-29[
B.04	102-65-24 | 104-92-09-60-59 [
B.05	82-24-69 | 104-92-09-60-59 | 28-110[
B.06	06-06-82 | 79-09-54-107 | 104-24 | 54-59[
B.07	75-76-74 | 47-47-60-59 | 102-70-••-••[
B.08	102-25-75-96 < | > 89-24 | 30-70-17-23 | 102[
B.09	25-25 | 104-09-90 | 110-78-23 | 06-06 | 107[
B.10	68-25-97 | ••-54-05-60-90 | 102-82-107-78[
B.11	102-08-08 | 68-25-75 | 82-23 | 102-61-21-••[
B.12	82-25-75-59 | 37-65-51 | 62-21-24-54[
B.13	107-06-06-90-08 | 102-49-80 | 47-70 | 04[
B.14	82-25-75-59 | 38-17 | 38-12-97 | 82-05-24-••[
B.15	102-76-35 | 78-95-33-35 | 38-17-59[
B.16	38-61-44-35 | 38-17-62 | 102-60-27 | 95[
B.17	102-76-29-08 | 68-25-33-25 | 102-87-59[
B.18	25-06-04 | 44-47-95-75 | 04-75-35 | 49-44[
B.19	30-70-65 | 102[••-••]17-95-05-27-107
B.20	25-06-04 | 44-47-95-75 | 04-75-35 | 56-47[
B.21	102-04-87[••-••-••]95 | 04-76-54-65 | 54[
B.22	21-78-51 | 44-61-09 | 25-54-47-60-59 | 44-78[

CM 3

##210. RASH Aéti 001 (*HoChyMin*: 386)

102-23

##211. RASH Aéti 002 (*CMI II*: 108–109, 254)

52-107-64 → **52**/**53**-107-**112**/**86**

		
		
52/**53**	**107**	**67**/**86**

Ferrara reads the first sign as CM 52, but unless the line between the two clear vertical strokes is accidental, the photograph rather suggests CM 53. Notice that form CM 52 is so far unattested at Ugarit (it is supposedly exclusive of CM 2).

			
			
Final sign	CM 112 (ENKO Abou 042)	CM 86 (ENKO Abou 029)	CM 64 (ENKO Abou 067)

The last sign displays three successive small upper strokes. This is diagnostic of CM 86 rather than CM 64, yet it does not have the "foot" that characterizes the former. Perhaps a poorly executed CM 112 can also be considered?

##212. RASH Atab 001 (*HoChyMin*: 387–392)

A.01 →	104-28-92 | 44-02
A.02 ←	98-23 | 102-37-06-05
A.03 →	23 | 104-36-[[23]] | 06-70
A.04 ←	| 04-13-36 | 19-94-23
A.05 →	| 06-25 | 44-06-100-91 |
A.06 ←	]27 | 44-92
A.07 →	]••
B.01 ←	]••-••
B.02 →	40 |[
B.03 ←	]40-36
B.04 →	| 06-09[ ]13[
B.05 ←	23-04-91 | 23-91-110-92
B.06 →	| 25-44-40 | 27[
B.07 ←	]38-27-•• | 19-23
B.*lat.sin.*	23-105-97 | 04-91

Observations and corrections:

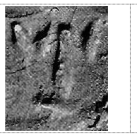
A.01-02

44-02-98-23 → 44-**02**-98-23

É. Masson's (1974) photograph				
É. Masson's (1974) drawing				
	Second sign of the sequence[1233]		CM 02 (RASH Atab 004.A.04)[1234]	CM 02 (RASH Atab 004.A.11)[1235]

The reading of the second sign seems safe. Despite the displacement of the left vertical stroke, its form is consistent with instances of CM 02 in RASH Atab 004.A and there are not feasible alternatives. The ductus was probably affected by the fact that the sign was inscribed on the curved edge of the tablet.

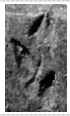
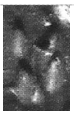
[1233] Photograph from Schaeffer (1956: 233, Pl. VIIIa) and drawing from É. Masson (1974: 26, fig. 12).
[1234] Photograph from *CMI* II.
[1235] Photograph and drawing from É. Masson (1974: 31, fig. 16 and Pl. II). The sign is not well visible in the photograph published in *CMI* II.

			
			
Third sign of the sequence[1236]		CM 98 (KLAV Avas 001)	Untranscribed (ENKO Avas 010)[1237]

This tablet presents evidence that sign CM 98, the third in this sequence, is distinct from CM 100, which occurs in line A.05.

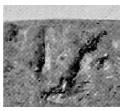
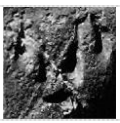
A.04

| 04-**13**-36 | 19-94-23 → | 04-**08**-36 | 19-**94**/**35**-23

 			
			
Second sign of the second sequence		CM 35 (RASH Atab 004.A.08)	CM 37b (RASH Atab 004.A.09)

A.06

44-92(-) → 44-**91**(-)

Schaeffer (1956: 233, Pl. VIIIa)				
É. Masson (1974: 26, fig. 12)				
	Second sign of the sequence		CM 92 (RASH Atab 001.A.01)	CM 91 (RASH Atab 001.A.05)

The second sign is damaged but the drawing suggests it is more similar to CM 91. CM 55 not impossible.

[1236] The photograph on the left is from Schaeffer (1956: 233, Pl. VIIIa) and the one of the right is from *CMI II*: 255.
[1237] Drawing from Dikaios (1971: 315: 56) apud *HoChyMin*.

B.01

]••-•• →]••-**09**

Schaeffer (1956: 234,Pl. IXc)			
É. Masson (1974: 26, fig. 13)			
	Last sign of the sequence		CM 09 (B.04)

CM 09 seems the most likely possibility for the last sign of the line, of which two lower horizontal strokes crossed by a vertical one are preserved.

B.04

]13[→]**08**[

B.07

]38-27-•• →]38-**23**-••

Schaeffer (1956: 233-234, Pl. VIIIa, IXc)	—		
É. Masson (1974: 26, figs. 12-13)			
	Second sign of the sequence	Sign 23 (A.02)	Sign 27 (A.06)

If any reading is to be proposed for the second sign, then CM 23 is a better option than CM 27.

Critical re-edition:

A.01 →	104-28-92 | 44-02
A.02 ←	98-23 | 102-37-06-05
A.03 →	23 | 104-36-[[23]] | 06-70
A.04 ←	| 04-08-36 | 19-94-23
A.05 →	| 06-25 | 44-06-100-91 |
A.06 ←	]27 | 44-91
A.07 →	]••
B.01 ←	]••-09
B.02 →	40 |[
B.03 ←	]40-36
B.04 →	| 06-09[ ]08[
B.05 ←	23-04-91 | 23-91-110-92
B.06 →	| 25-44-40 | 27[
B.07 ←	]38-23-•• | 19-23
B.*lat.sin.*	23-105-97 | 04-91

##213. RASH Atab 002 (*HoChyMin*: 394)

01	]•• | ••[
02	]07 IIII 102-04 II[
	———————
03	]••-06[
04	]•• | 23[

Observations and corrections:

.03

102-04 → **104**-04

Second sign of the sequence[1238]

[1238] Photograph from CMI II and drawing from É. Masson (1974: 23, fig. 9).

The correct transcription of the first sign is 104. The sequence 104-04 is repeated in RASH Atab 003.02.

04

]••-06[→]**104**-06[

É. Masson's (1974) drawing	
	First sign of the sequence

The first sign is likely to be CM 104. Cf. example in line 03.

Critical re-edition:

01	]•• ↓ ••[
02	]07 IIII 104-04 II[
03	]••-06[
04	]•• | 23[

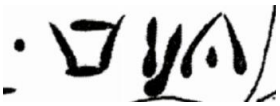
##214. RASH Atab 003 (*HoChyMin*: 396–398)

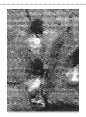
01	● 38-05-21-97 | 99[ ]07-53-27-75-••		
02	● 104-04 X 75-82-23[		
03	110-••-07[ ]••-07-•• |[ ]75-••	*lat. dex.*	••
04	]••		23
05			21
06	]••		••

Observations and corrections:

02

X 75-82-23[→ X 75-**11**-23[

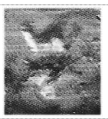
Photograph of the sequence of *CMI*	
É. Masson's (1974) drawing	
	X 75-82-23

			
			
Second sign[1239]		CM 11 (RASH Atab 004.B.19)	CM 11 (ENKO Atab 003.A.17)

Olivier proposes CM 82 for the second sign of the sequence. Nevertheless, the color photograph in CMI II suggest that the oblique stroke on the right is less deep, as if it were accidental or the product of an erasure. Even if the stroke is deliberate, the left part of the sign would still feature two clear dots or vertical strokes, which is not consistent with CM 82. Therefore, a more likely reading seems to be CM 11.

03

110-••-07[

		
		
First sign of the sequence[1240]		CM2 110 (ENKO Atab 003.A.10)

It is noteworthy that the first sign is formally closer to the CM 110 of CM 2 than that of CM 1, since the two strokes above are drawn closely forming a bow. It is also sequence-initial, the most frequent position for CM2 110.

[1239] Photograph and drawing from *CMI* II: 257.
[1240] Photograph from *CMI* II and drawing from É. Masson (1974: 21, fig. 7).

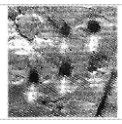
]••-07-••

		
		
First sign of the sequence[1241]		CM 86 (KITI Abou 001)

The sign bears some resemblance to some instances of CM 86.

Lat. dex.

•• → **V/VI**

	
Sign	IV (RASH Atab 002.02)

The photographs from *CMI* II demonstrate the presence of a damaged numerical notation, not a phonogram. Cf. also 2.3.22.

Critical re-edition:

01	● 38-05-21-97 | 99[ ]07-53-27-75-••		
02	● 104-04 X 75-86-23[		
03	110-••-07[ ]••-07-11 |[ ]75-••	*lat. dex.*	V/VI
04	]••		23
05			21
06	]••		••

[1241] Photograph from *CMI* II and drawing from É. Masson (1974: 21, fig. 7).

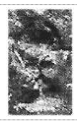
##215. RASH Atab 004 (*HoChyMin*: 399–407, 498)

A.01	102-25-87 | 51-28 | 55-09 ¶
A.02	102-23-51-28 | 102-74-82-51 | ¶
A.03	104-58-06-09 | ¶
A.04	102-02-100 | 55-25-51-40 ¶
A.05	102-04-04-96 | 51-28 | 04-71-100 ¶
A.06	104-71-06-23 | 51-28 | 38-105-23-58 ¶
A.07	51-28 | 38-35-100 | ¶
A.08	103-35-82-51 | 51-28 | 25-51-09 ¶
A.09	37-04-100 ¶ | 104-09-71-100 | 37-71-100-40 ¶
A.10	04-08-100 | 51-28 | 104-09-04-55-96 ¶
A.11	102-02-71-100 | 51-28 | 92-28-95-100 ¶
B.12	19-87-72-96 | 23-25-06-100-40 ¶ [1242]
B.13	21-82-75-51 ¶
B.14	104-09-55-09-70 | 51-28 | 19-91-73-23 ¶
B.15	102-25-87-51 | 51-28 | 55-70 ¶
B.16	38-01-04-82-09 | 102-75-51-55-82-21-09 ¶
B.17	102-74-75-51 | 27-69 | 55-70-••-••-06-96-37 ¶
B.18	73-92-100 | 51-28 | 55-70 ¶
B.19	82-58-55-09-70 | 92-11-96 | 06 ¶

Observations and corrections:

A.03

104-58-06-09 → 104-**25**-06-09

CMI II					
É. Masson (1974)					
Author's drawing		—			
	Second sign of the sequence	CM 58 (A.06)	CM 58 (B.19)	CM 25 (A.04)	CM 27 (B.17)

The photograph shows that the sign is drawn with two upper lateral lines that are curved and one central vertical stroke that is first incised downwards and then crossed by a horizontal one. These traits eliminate CM 27, 28 and 105 as possibilities, especially if we consider the examples of these signs on the tablet. Either this is an independent sign, only attested in this tablet, as proposed by É. Masson, of it is a poorly executed CM 25,

[1242] Sic. The first sequence is consistently transnumerated 19-87-72-96 with sign CM 72 instead of 73 in all occasions (*HoChyMin*: 405, 498).

as proposed by Ferrara (cf. *CMI* I: 144, tab. 3.1). At first sight it would seem like an obstacle that the secure instances of CM 25 in the tablet (e.g. in line A.04) look very different, e.g. because they exhibit larger and more curved lateral strokes. However, similar levels of paleographical variation are seen in other signs that are used multiple times in this document (cf. CM 100 and 102). Yet another possibility, in this case but not in A.06 and B.19, is that this is a poorly executed CM 102.

A.06

38-105-23-58 → 38-105-**25**/**102**-25

É. Masson's (1974) photograph				
				
	Third sign of the sequence	CM 25 (A.04)	CM 23 (A.06)	CM 102 (A.04)

The elongated curves of the third sign are more indicative of 23, but there is also a visible horizontal stroke crossing the central vertical one, which is a diagnostic trait of 25. Perhaps the scribe produced a 23 which he afterwards corrected into 25. On the other hand, 102 is in theory a possibility
The last sign is most probably a variant of 25 (see above in A.03).

A.08

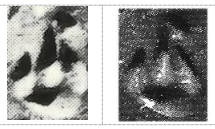
103-35-82-51 → **102**-35-82-51

CMI II				
É. Masson (1974: Pl. II)				
	First sign of the sequence	CM 102 (A.05)	CM 102 (B.15)	

É. Masson (1974: 46) left this sign untransliterated, while Olivier read it as CM 103. For the reasons given in Chapter 2, CM 103 is controversial and the securest examples, the ones found in ENKO Arou 001 (), are distinct from our present case as regards the lateral strokes. In practice, the sign in question is very similar to CM 24 (), but the latter is so far thoroughly absent from the Ugarit subcorpus, so most likely what we have is a defective CM 102. The sequence-initial position of the sign supports this view.

A.09

37-04-100 → **37b**-04-100:

			
			
First sign of the sequence	CM <u>41</u> (ENKO Abou 006)[1243]	CM 41 (IDAL Avas 001)	CM 41 (ENKO Arou 001.10)

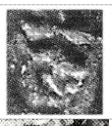
This sign has so far been read as a dubious CM 37 that (accidentally?) lacks one of the two left lateral strokes. However, it is consistently drawn in this manner in all of its instances in the tablet, so the absent stroke appears to be a diagnostic trait. In 2.3.8 it is argued that this is a variant of rare sign CM 41 of CM 1, which for convenience I label "37b". The latter shows much paleographical variation but some traits of its ductus are stable. Its upper portion contains a straight or slightly oblique central stroke which ends in an appendage that hangs downwards like a "tail". At mid height, the sign branches out to form a sort of three-armed delta shape. These "arms" may end in three short horizontal strokes (like "feet") or, in alternative, a single horizontal line may appear at the bottom. Notice the great resemblance between the sign in question as it appears in this line of RASH Atab 004 and the dubious instance of CM 41 in ENKO Abou 006.

<u>37</u>-71-100-40 → **37b**-71-100-40:

See immediately above.

B.12

19-87-72-96 → 19-87-**73**-96

CMI II	—		
É. Masson (1974: Pl. II)	—		
É. Masson (1974: 33, fig. 17)			
	Third sign of the sequence	CM 73 (B.14)	CM 73 (B.18)

This line is not well visible in the photographs of É. Masson (1974) and *CMI* II and all we have is the drawing. The shape of the third sign, as shown in the latter, is identical with the instance of CM 73 in B.18, not CM 72.

[1243] Drawing from *HoChyMin*.

23-25-06-100-40 → [[••]]25-06-100-40

CMI II	
É. Masson (1974: Pl. II)	
É. Masson (1974: 33, fig. 17)	
	First sign of the sequence

The photographs available are not very helpful, as they do not show frontally the sign (which is located on the upper edge of the tablet). É. Masson's drawing implies that a character, possibly CM 27 or 105, was erased and replaced by CM 25. Differently, Olivier reads CM 23 and does not consider it to have been erased.

B.17

27-69 → **27**-69

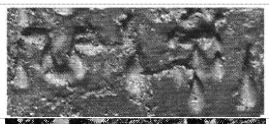
CMI II	
É. Masson (1974: Pl. II)	
É. Masson (1974: 33, fig. 17)	
	Sequence

55-70-••-••-06-96-37 → 55-70-••-06-96-**37b**

For the last sign, see above the annotations on line A.09.

B.19

92-11-96 → or 92 ¦ 96

CMI II	
É. Masson (1974: Pl. II)	
	Second sign

The reading of the second sign is likely, but unfortunately the tablet does not contain further examples of this character to support the interpretation. Another possibility is that this is a poorly executed divider.

Critical re-edition of RASH Atab 004

A.01	102-25-87 | 51-28 | 55-09 ¶
A.02	102-23-51-28 | 102-74-82-51 | ¶
A.03	104-25-06-09 | ¶
A.04	102-02-100 | 55-25-51-40 ¶
A.05	102-04-04-96 | 51-28 | 04-71-100 ¶
A.06	104-71-06-23 | 51-28 | 38-105-23/102-58 ¶
A.07	51-28 | 38-35-100 | ¶
A.08	102-35-82-51 | 51-28 | 25-51-09 ¶
A.09	37b-04-100 ¶ | 104-09-71-100 | 37b-71-100-40 ¶
A.10	04-08-100 | 51-28 | 104-09-04-55-96 ¶
A.11	102-02-71-100 | 51-28 | 92-28-95-100 ¶
B.12	19-87-73-96 | [[••]]25-06-100-40 ¶
B.13	21-82-75-51 ¶
B.14	104-09-55-09-70 | 51-28 | 19-91-73-23 ¶
B.15	102-25-87-51 | 51-28 | 55-70 ¶
B.16	38-01-04-82-09 | 102-75-51-55-82-21-09 ¶
B.17	102-74-75-51 | 27-69 | 55-70-••-06-96-37b ¶
B.18	73-92-100 | 51-28 | 55-70 ¶
B.19	82-25-55-09-70 | 92-11-96 | 06 ¶ or 92 ¦ 96 | 06 ¶

##216. RASH Mvas 001 (*HoChyMin*: 408)

91 | 02-102 → or 102-02 | 91

Schaeffer (1956: 234, Pl. IXa)

É. Masson (1974: 20, fig. 5)

Already É. Masson considers the reading to be probably leftwards, because CM 102 is almost always found in initial position. Olivier abandons Masson's idea that the second sign after 102 is a hapax and reads it as CM 02. This reading cannot be considered absolutely certain since we lack other examples of this variant, but it is the most likely. With the due diferences considered, we may compare 02 in ENKO Avas 007. The last sign is damaged by the fracture and, although the reading CM 91 is likely, we cannot exclude that the damaged part had the extra diagnostic stroke of CM 92.

##217. SYRI Psce 001 (*HoChyMin*: 409)

71-50-05-56 → 71-50-05-**56**/**23**

É. Masson (1974: 24, fig. 10)

For the last sign, CM 23 cannot be excluded, especially given the superfrequency of this sign finally in inscriptions consisting of one sequence.

ADDENDA (*CMI*)

N.B.: Except when stated otherwise, the photographs provided are from *CMI* II and the drawings are mine

ADD##218. PARA Psce 002 (*CMI II*: 113-114, 264)

12-23 (seal) → or 23-12 (impression)

Sequence (seal)[1244]

From the drawing of Ferrara it would seem that she transcribes the inscription on the seal, even though she states that the reading "appears to be in impression".

ADD##219. APLI Psce 001 (*CMI II*: 114, 265)

102

This is not an inscription *strictu sensu*, but rather a "mark".

ADD##220. CYPR Psce 007 (*CMI II*: 114-115, 265)

01-69-12-98 (impression) → 01-69-04 67 (impression) or 67 04-69-01 (seal)

Sequence (seal)[1245]

It is very difficult to assess the reading based only on the illustrations available (Courtois and Webb 1987: Pls. I:15, V:15; Smith 2002: 11; and *CMI* II: 265). The inscription reads in impression according to Smith (2002: 11), who gives as evidence the orientation of sign CM 12. Ferrara transcribes the second sign (in impression) with the shape of CM 70, but transnumerates it as CM 69. Notice also that the fourth and last sign is separated from the other three by one of the anthropomorphic figures depicted in the seal's imagery (this is visible in the photograph above, but not the drawing). This last character, if anything, resembles CM 67 (𒌨)

[1244] The drawing is the one given in *CMI* II, but flipped horizontally so as to show the sequence as seen on the seal.
[1245] The photograph and the drawing are both from *CMI* II: 265.

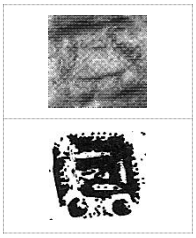
ADD##22I. DHEN Mvas 001 (*CMI II*: 266–267)

05(-)05 | 05

The photograph and drawing only show 05 | 05. This is possibly a set of marks rather than writing *stricto sensu*.

ADD##222. ENKO Apes 002 (*CMI II*: 268)

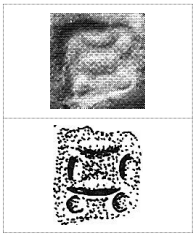
97, or 102 → **97**



Photograph and drawing from *CMI* II. The sign is fully compatible with CM 97 and there is no need to consider CM 102 a possibility. However, this is a single sign, not a true inscription.

ADD##223. ENKO Apes 003 (*CMI II*: 268)

97, or 102 → **97**



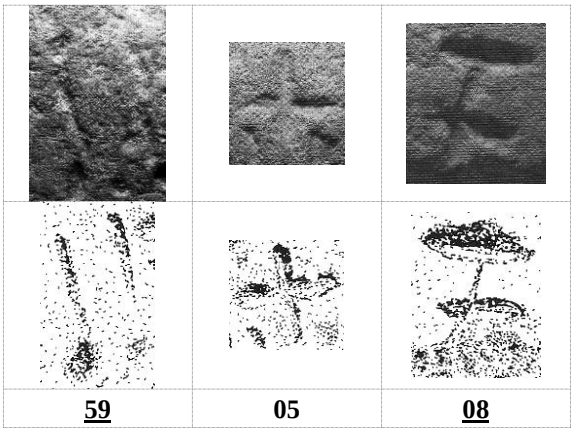
Photograph and drawing from *CMI* II. Same observations as ENKO Apes 002.

ADD##224. ENKO Pblo 002 (*CMI II*: 269)

•• | 05-08

→

59-05(-)08

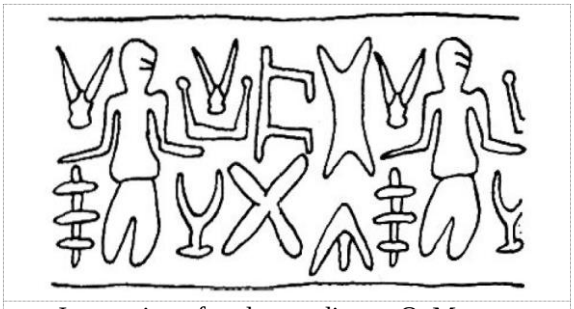


59	**05**	**08**

Photograph and drawing from *CMI* II. The signs are inscribed in a "clockwise manner". While Ferrara duly notes that the surface of the objective is quite damaged and we must be cautious about any reading, the first sign would is probably consistent only with CM 59.

ADD##225. ENKO Psce 003 (*CMI II*: 117, 270)

82-••-23-07 → **87/82$^{(?)}$(-)**23-07



Impression of seal according to O. Masson (1957a: 8, fig. 1*bis*; reproduced without scale).

Already Daniel (1941: 282, no. 18, S3) observed that the first sign of the cylinder represents a "symbol" and is "perhaps not script". The fact that it has a "foot" makes it more similar to sign CM 87 than to CM 82, but even with the former the match is not perfect. The second alleged character, shaped like an X, shows an orientation that is not consistent with sign CM 05 (otherwise the best candidate comparandum). Conversely, an X-shaped motif is common in the iconography Cypriot seals (see Porada 1948: no. 48). We are then left with 23 and 07 as the only safe signs of formal Cypro-Minoan writing.

ADD##226. ENKO Psce 004 (*CMI II*: 117–118, 270)

Transcription "unspecified" and no illustration given. The object is reported missing in the Musée du Louvre.

ADD##227. ENKO Psce 005 (*CMI II*: 118, 270)

Transcription "unspecified". However, the photograph of the impression provided by Ferrara makes it possible to offer a reading:

64-98 (impression) or 98-64 (seal)

64	98

ADD##228. ENKO Mins 003 (*CMI II*: 118)

Ferrara: "One sign? Doubtful whether it bears any relation to the formal script, but found in association with formal inscriptions, possible example of imitation?"

As with other ADD## inscriptions, this appears not to be an example of formal writing.

ADD##229. ENKO Mins 004 (*CMI II*: 119, 271)

04-27-97 → 04-**25**/**27**-97

Second sign[1246]

The second sign lacks a "foot," which makes it closer to CM 25 than CM 27. Still, there is no photograph available for verification. The drawing shown here is drawn from *CMI* II but is originaly from Catling (1964: 86, fig. 8:8, pl. 6:c).

ADD##230. ENKO Mins 005 (*CMI II*: 119)

23-104

Ferrara does not provide the illustration of Catling (1964: 78, fig. 7:1, pl. 3a).

[1246] Drawing from *CMI* II: 271.

ADD##231. KLAV Avas 001 (*CMI II*: 119–120, 272–273, Pl. XLVII-XLVIII)

33-98 → **<u>33</u>/<u>46</u>**-98

		
		
First sign	CM 46 (ENKO Abou 027)	CM <u>33</u> (KALA Mbij 002)

Ferrara reads CM 33 with certainty, but the only variant of the latter that is comparable to the first sign of KLAV Avas 001 is the one in KALA Mbij 001-002 (cf. above), which is so distinct that it is considered doubtful itself. A plausible alternative is CM 46.

	 	
		
Second sign	CM 98 (RASH Atab 001.A.01)[1247]	

Variant of CM 98 with a foot, like the one in RASH Atab 001.A.01.

ADD##232. IDAL Psce 001 (*CMI II*: 120–121, 274)

Ferrara correctly deems the presence of two alleged Cypro-Minoan signs as "very doubtful" and includes the seal "*only because the past literature deemed it a bona fide inscription*". This seal was originally collected by O. Masson (1957b) and in the light of present knowledge it seems certain that it contains no sign of the Cypro-Minoan repertory.

ADD##233. IDAL Avas 003 (*CMI II*: 121, 274)

••-••-27 → **] <u>102</u> | 13-82-25**

[1247] The photograph on the left is from Schaeffer (1956: 233, Pl. VIIIa) and the one of the right is from *CMI II*: 255.

102	**|**	**13**	**82**	**25**

The photograph published by O. Masson (1957a: no. 167, 16, pl. I, fig. 6) allows for more precise readings of the second sequence.
Cf. ENKO Abou 054 for the reverse sequence, 25-82-13.

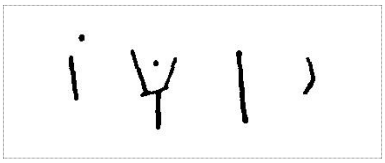
ADD##234. IDAL Pfus 001 (*CMI II*: 121–122)

05-07-23

The object is missing and no photograph was ever published. I transcribe here the three signs reported by O. Masson and transnumerated according to present conventions by Ferrara.

ADD##235. KALO Avas 001 (*CMI II*: 122, 274)

| 101 | ••[



There are only drawings of this inscription, which are insufficient to confirm the reading. The one that supports the reading of the first sign as CM 101 is the on from P. Åström (1966, Pl. 44, fig. 133), reproduced by Palaima (1989a: fig. 13). As argued above and in Chapter 2, this sign shape is likely to be an allograph of CM 102.

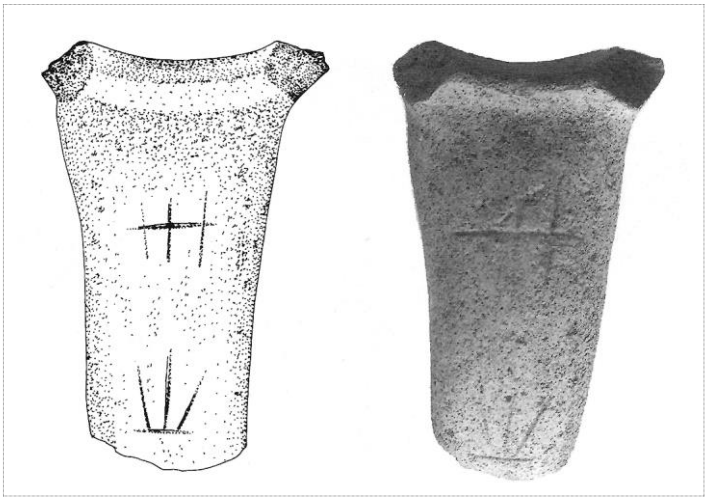
ADD##236. KITI Avas 020 (*CMI II*: 122–123, 275)

| 23 → **23[**

Ferrara acknowledges that only one sign (CM 23) is preserved, but claims the likely pattern is the typical SIGN | SIGN. Since the illustrations given show a broken CM 23 and no clear traces of a divider, here a more cautious reading is adopted. In fact, this is possibly not writing *stricto sensu*.

ADD##237. KITI Avas 021 (*CMI II*: 123, 276)

23-06 → **••-61**



The photographs and drawings are from *CMI* II. Here I invert the photograph in order to show the inscribed object, the handle of a ceramic container, as it would have been seen and read. Ferrara reads the sign closest to the mouth of the container as the last, but it is probably the initial one. The upper sign is difficult to identify, whereas the lower one is CM 61 (Ψ), which occurs frequently on other handles inscribed with two signs from Kition.

ADD##238. MAAP Avas 005 (*CMI II*: 123–124, 277)

61-101

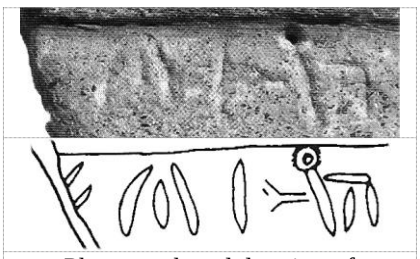
The last sign is probably a variant of CM 102 (see above and 2.3.20).

ADD##239. MARO Avas 002 (Cadogan *et al.* 2009: 147–150; *CMI II*: 124, 278)

82-91-23

ADD##240. MARO Avas 003 (Cadogan *et al.* 2009: 150–153; *CMI II*: 124, 279)

38-23-11-47 → **]••**-23 | 47, or **]••**-23-**04**-47

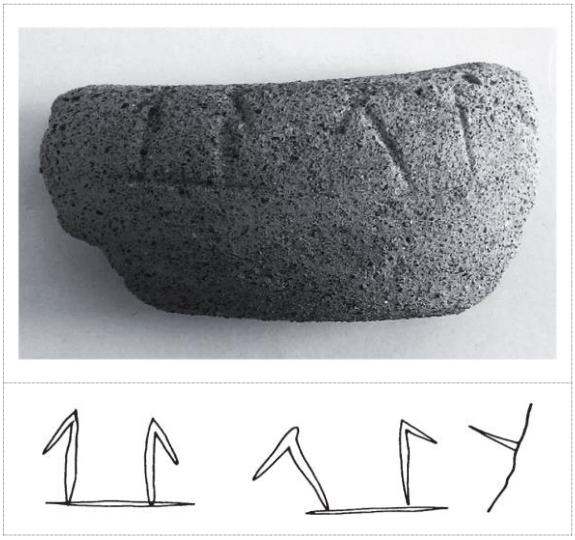


Photograph and drawing of inscription according to *CMI II*

Ferrara acknowledges the difficulties posed by this inscription, given its state of preservation. For the first sign CM 38 is a possibility, but hardly a safe one. The second sign is undoubtedly CM 23. To its right there are traces of writing difficult to assess: first, a vertical stroke, then two oblique strokes which converge into a horizontal line. They seem disconnected from both the preceding line and the following sign. If the vertical stroke is taken to be a unit, then it ought to be a divider; if, on the other hand, the two elements were somehow meant to form a sign, then 04 is a possibility. For the last sign CM 46/47 is preferable to CM 17 given that the two smaller vertical strokes to the right are topped by a horizontal one. As noted in Cadogan *et al.* (2009: 153), the form is more compatible with CM2 47 than CM1 46.

ADD##241. MARO Avas 004 (Cadogan *et al.* 2009: 153–155; *CMI II*: 125, 280)

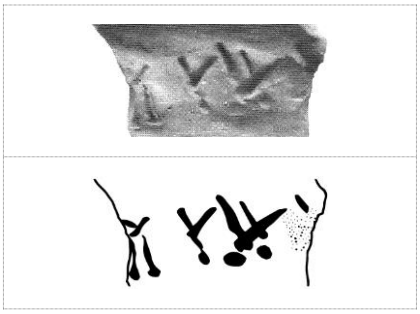
91-91 → 91-91-•• **[**



Photograph and drawing from Cadogan *et al.* (2009: 154, figs. 7-8). According to Cadogan *et al.* (2009: 155), "a thick oblique stroke is detectable on the right upper section of the second sign, which may suggest the presence of a third sign". This idea is confirmed by the published illustrations.

ADD##242. SANI Avas 001 (*CMI II*: 125–126, 281)

23-82-104 → **]••-53-••[**



Photograph according to *CMI II* and drawing by the author. The first sign broken and could perhaps be something other than CM 23. What is here taken to be a single sign

was read by Ferrara as two: -82-104-. However, the form would be unusual for CM 82, not to mention that the two graphemes would be too close to each other, while being relatively separated from the signs to the left and to the right. Given these circumstances and because of the visible presence of two or three dots on the lower portion, I suggest that this is rather a single sign corresponding to CM 53 (𐄩). It would seem, however, that one of the oblique strokes and one dot were repeated on the right side of the sign. To the right there are traces of a third sign.

ADD##243. RASH Avas 001 (*CMI II*: 126)

"Inscription consiting of five signs, transcription not reported anywhere."

ADD##244. TIRY Abou 001 (Vetters 2011–12; *CMI II*: 126)

41-41-97

FURTHER ADDENDA

N.B.: Unless stated otherwise, the reading provided here for ADD##247-253 is the one found in Valério (2014b).

ADD##245. TIRY Avas 001 (Olivier 1988: 255-256; 258, fig. 2, no. 13; Hirschfeld 1999: 72)

Handle of "Canaanite amphora" inscribed with two signs, 25-87. According to B. Davis (pers. comm.), the inscription will be be republished in the future.

25-87

ADD##246. TIRY Avas 002 (B. Davis *et al*. 2014)

87-51-05

ADD##247. ENKO Abou 084 (É. Masson 1978b: 808, fig. 1g; Del Freo 2010: 310–311; Valério 2014b: 3-4)

102-87-107-97 | 04

ADD##248. KOUR Avas 005 (Daniel 1941: 273, fig. 13:9; Benson and Masson 1960: 145-146, 150; Valério 2014b: 4-5)

102-06

ADD##249. KOUR Avas 006 (Benson and Masson 1960: 145-146, 150, Pl. 36; Valério 2014b: 5-6)

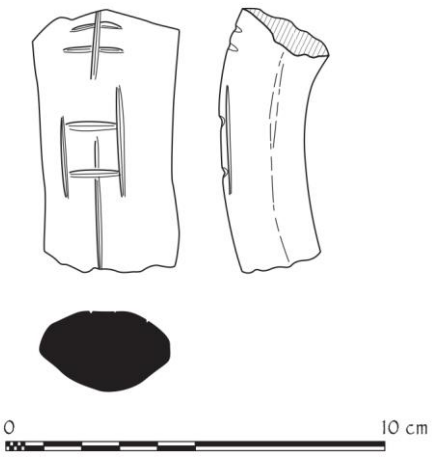
05-82-04 (dextroverse), 04-82-05 (sinistroverse), or 05-82-05 (dextroverse).

ADD##250. KOUR Avas 007 (Daniel 1941: 273, fig. 13:1; Benson and Masson 1960: 147, Pl. 36; Smith 2012: 48, fig. 3a ; Valério 2014b: 6-7)

13/78-25-23[

ADD##251. RASH Avas 002 (Matoian 2012: 154-155, fig. 34; Valério 2014b: 7-8)

]06-95/96[



Drawing by H. David (©Mission de Ras Shamra) apud Matoïan (2012: 155, fig. 34).

—				
				
Second sign		CM 96 (PYLA Psce 001)	CM 96 (ENKO Abou 021)	CM 95 (RASH Atab 004.A.11)

For the second sign CM 95 and 96 are both possibilities, but the latter is more likely because the lower vertical stroke surpases the lowest horizontal one. This is a diagnostic feature for CM 96 that so far is unseen with CM 95.

ADD##252. CYPR? Psce 008 (Delaporte 1910: 269-270, no. 478, Pl. XXXII, fig. 478; Ward 1910: 353, no. 1212; Contenau 1922: 151, 206, Pl. XXIX, fig. 199; Daniel 1941: 269-270, fig. 12, no. 10; Valério 2014b: 8-10)

102-39-46 (reading on the seal)

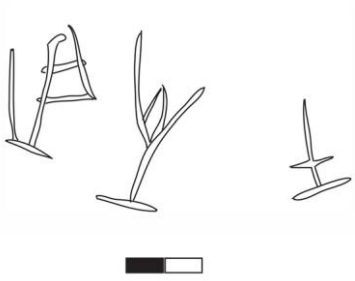
ADD##253. PPAP Psce 001 (V. Karageorghis 1983a: 185-189, Pl. CXX, no. 1a; Porada 1983: 409; Valério 2014b: 10-11)

102-72 (on the seal)

N.B.: Except when stated otherwise, the photographs provided are from *CMI* II and the drawings are mine

Erimi-*Kafkalla* T.2/2 (Hirschfeld and Smith 2012)

88-84-09 → 88-**98**-09



Drawing of the inscription by N. Hirschfeld and J. Smith

For the first character, CM 88 (𐔄) is more likely than CM 92 (𐔈), given the absence of an extra stroke on the upper left portion of the sign.

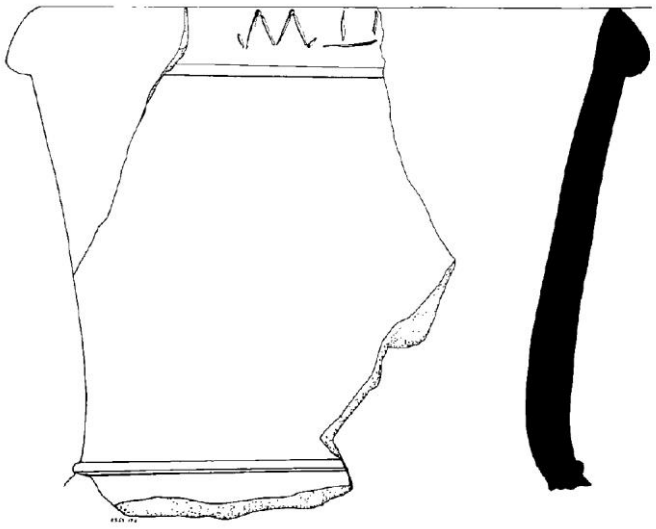
—					
					
Second sign		Untranscribed (ENKO Avas 010)[1248]	CM 201 (KALA Ppla 001)[1249]	CM 98 (RASH Atab 001.A.01)[1250]	

For the probable inexistence of CM 84 as an independent sign, see above on ENKO Abou 068 and KITI Ipla 001 *r*. The second sign of this inscription is a direct match for the untranscribed sign in ENKO Avas 010 and bears close resemblance to the dubious sign in KALA Ppla 001 as well as CM 98. As argued above and in Chapter 2, taken together these instances are evidence for a larger array of variants of CM 98, with and without a foot. However similar, CM 99 (𐔉) is unlikely, because it cannot account for the variants of CM 98 without the lower horizontal stroke, whereas the version of CM 98 with a foot is known to coexists with CM 99 in RASH Atab 001.

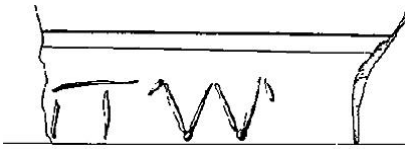
[1248] Drawing from Dikaios (1971: 315: 56) apud *HoChyMin*.
[1249] Drawing from É. Masson (1989: fig. 62:2) apud *HoChyMin*.
[1250] The photograph on the left is from Schaeffer (1956: 233, Pl. VIIIa) and the one of the right is from *CMI II*: 255.

RS 1963 (Courtois and Courtois 1978: 280-281, fig. 29)

]47/78-55



Full view of the object



Detail of the rim with the inscription (inverted)

Drawing adapted from Courtois and Courtois (1978: 281, fig. 29.1), not at scale. If the identification of the object as the neck of a pithos is correct, then the inscription was written with the rim facing downwards (could this be a support?). The second sign is clearly Cypro-Minoan, namely CM 55 (𒋾).

Appendix B

INDICES OF SIGN-SEQUENCES

AIMS AND PRESENTATION

The rationale of the indices follows to some extent that used in *GORILA* (see detailed explanation in *GORILA V*: 138-139). However, as Godart and Olivier acknowledge, in some cases more than one choice seems reasonable, while all would entail theoretical and practical problems. The criteria followed in this thesis led to a number of modifications to their scheme, resulting in a different organization. Thus, in increasing order, each sign (X) is indexed as follows:

(1)	X	The sign is in isolation, either as an absolute isolate (mark), a monosyllabic word or as an abbreviation/in logographic use.
(2)	X-...	The sign is sequence-initial.
(3)	X[	The sign is in isolation before a fracture: it could be (1) or (2).
(4)	]X-…	It can only be determined that the sign is non-final; it could be (2) or (5)
(5)	…-X-… …-X-…[ ]…-X-…	The sign is medial.
(6)	…-X[	It can only be determined that the sign is non-initial: it could be (5) or (8)
(7)	]X	The sign is in isolation after a fracture; could be (1) or (8)
(8)	…-X	The sign is final.
(9)	]X[	The sign is in isolation after and before a fracture: it could be (1), (2), (5) or (8)

To facilitate the perception of relative position, a system of indentation is also used. Signs that cannot be final or for which a medial position is only a possibility have no indentation (1–4); signs certainly medial have “one” indentation (5); and signs that *are or could be* final have “two” indentations (6–9). Thus:

X
X-...
X[
]X-…
…-X-…
…-X[
]X
…-X
]X[

Signs placed before or after X are organized in increasing numerical order. Unreadable signs (••), first, and then fractures (], [), are always last in order after readable signs.

Whenever a reading is the result of a correction proposed in the appendices of critical re-edition of the inscriptions, I include the corresponding reading of *HoChyMin* to facilitate the comparison. This allows, for example, a prompt assessment of whether the correction affects a given interpretation of the sequence in the dissertation.

CM 1

01

01-23-72-85 (ENKO Abou 040)
01-23-72-85 (ENKO Abou 066)
01-23-72-85 (ENKO Abou 064)
01-38 (or 38-01?) (MAAP Avas 003) — *HoChyMin*: 01-38
01-85-88-112 (ENKO Abou 039)
    27-86-01-06 (KALA Arou 001.11)
        46-08/01 (KALA Arou 001.04)
        102-23-91-01 (KALA Arou 001.04)

02

02-••[(ATHI Avas 002)
    55-02-09-72 (PSIL Asta 001) — *HoChyMin*: 55-02-09-72
        23-02 (ENKO Avas 007)

04

04-04-97 (CYPR Mvas 002)
04-09-88-08-07-21(-) (ENKO Arou 001.13) — *HoChyMin*: 04-09-88-13-07-21
04-13-••[ ]•• (KITI Abou 001) — *HoChyMin*: 04-08-104[ ]••
04-26 (KITI Avas 002)
04-36-12-69 (| 05) / 04-36-12-70-05 (ENKO Abou 071) — *HoChyMin*: 04-36-12-69
04-87-25 (ENKO Arou 001.10, 14-15, 17, 23)
04-88-82-••-••-•• (KALA Arou 001.07)
04-91-82-27-••(-••) (ENKO Abou 014) — *HoChyMin*: 04-91-82-27-••-••
04-104-37-53 (ENKO Abou 032)
]04 (ENKO Apla 001)
    04-04-97 (CYPR Mvas 002)
    12*b*-04-97 (ENKO Abou 026)
    25-04-99-07 (ENKO Arou 001.24)
    27-04-103 or 27 | 103 (ENKO Abou 020) — *HoChyMin*: 27-04-103
    44-04-13-69 (PARA Psce 001) — *HoChyMin*: 44-04-08-69
    82-04-19-86 (KITI Abou 001)
    102-04-08-50 (ENKO Abou 005) — *HoChyMin*: 101-04-13-50
    06-06-04-99-46 (ENKO Abou 082)
    64-27-04-06 (ATHI Adis 001)
    102-73-04-97 (ENKO Abou 045)
    102-73-04-97 (ENKO Avas 002)
    102-73-04-97 (ENKO Abou 015) — *HoChyMin*: 102-73-04-97
    102-73-04-97-23 (KITI Ipla 001.*v*)
    102-73-04-97-110-73 (ENKO Abou 021)
    102-109-04-13-23 (CYPR Mvas 002)

102-109-04-13-23 (ENKO Mvas 002) — *HoChyMin*: 102-109-04-08-23
38-87-87-04-09-69-23 (ATHI Avas 001)
]102-04-53-70 (KITI Iins 002.a)
]97-104-04-••-••-••[(ENKO Aost 002)
46-25-09-04[(KALA Arou 004.02)
12*b*-04 (ENKO Abou 017)
102-04 (CYPR? Psce 003)
13-72-04 (ENKO Abou 065) — *HoChyMin*: 08-72-04
110-102-53-04 (ENKO Arou 001.03-04)
]••-59-04 (KALA Arou 002.04)

05

05 (ENKO Abou 040)
05-37-97-23-46 (KITI Avas 001) — *HoChyMin*: 05-37-97-23-46
05-108-37 (ENKO Apes 001) — *HoChyMin*: 05-108-64
64-05-24 (ENKO Abou 067, 072; HALA Abou 002)
27-50-12-05-102-87-13 (ENKO Abou 061) — *HoChyMin*: 27-50-12-05-102-87-78
] ••-05-68-104[(ENKO Aost 002)
38-05[(ENKO Avas 009)
38-05 (KALA Avas 001)
09-55-67-05 (CYPR? Psce 004) — *HoChyMin*: ••-••-67-05
04-36-12-69 (⌊ 05) / 04-36-12-70-05 (ENKO Abou 014) — *HoChyMin*: 04-36-12-69
06-73-110-27-05 (ENKO Abou 018)

06

06 (ENKO Abou 013, 058; ENKO Arou 001.06, 07)
06 (ENKO Abou 054) — *HoChyMin*: 25-82-97-11-06
06-06-04-99-46 (ENKO Abou 082)
06-12 (CYPR Mvas 002)
06-23 (ENKO? Psce 002; KITI Avas 015)
06-25-82-97 (ENKO Abou 055) — *HoChyMin*: 06-25-82-97
06-73-110-27-05 (ENKO Abou 018)
]06-23-13-23 (ENKO Avas 004)
06-06-04-99-46 (ENKO Abou 082)
11-06-53-96(-) (ENKO Arou 001.24)
27-06-97 (ENKO Abou 019)
82-06-82-88-23 (PPAP Mvas 001)
102-06-23-••-•• (ENKO Abou 075) — *HoChyMin*: 101-06-23-••-••
102-06-67-91-72 (ENKO Abou 057)
82-61-06-99 (ENKO Abou 010) — *HoChyMin*: 107-••-••-••-82-61-06-99
104-09-06-09 (ENKO Abou 080)
104-11-24-06-12-23 (ENKO Arou 001.06)
]17/46-06-97 (ARPE Avas 001) — *HoChyMin*:]46-06-97
]25-06-27-25-97[(ENKO Avas 001)

]••-15-••-••-••-27 (ENKO Pblo 001) — *HoChyMin*:]12-15-••-••-••-27
39-06 (KALA Arou 001.05)
38-27-06 (KATY Avas 001) — *HoChyMin*: 38-27-06
27-86-01-06 (KALA Arou 001.11)
64-27-04-06 (ATHI Adis 001)

07

19-23-69-07-21 (ENKO Arou 001.20-21)
38-09-75-07-21 (ENKO Arou 001.11)
04-09-88-08-07-21(-) (ENKO Arou 001.13) — *HoChyMin*: 04-09-88-13-07-21
104-07 (ENKO Arou 001.02-03)
25-04-99-07 (ENKO Arou 001.24)

08

08-23-25-••[(PYLA Mlin 001) — *HoChyMin*: 13-23-25-••[
08-97[ ]••-27 (KALA Arou 005.03) — *HoChyMin*: 13-97[ ]••-27
27-08-70 (ENKO Abou 053) — *HoChyMin*: 27-13-70
27-08-110-97-23 (ENKO Arou 001.04-05; KOUR Psce 001)
102-04-08-50 (ENKO Abou 005) — *HoChyMin*: 101-04-13-50
104-72-08-67 (ENKO Abou 046) — *HoChyMin*: 104-72-13-67
04-09-88-08-07-21(-) (ENKO Arou 001.13) — *HoChyMin*: 04-09-88-13-07-21
26-08 (ENKO Arou 001.07) — *HoChyMin*: 26-13
46-08/01 (KALA Arou 001.04)
39-21-08 (ENKO Arou 001.18) — *HoChyMin*: 39-21-13
102-37-08 (ENKO Abou 010) — *HoChyMin*: 101-37-08
82-102-59-08 (ENKO Abou 077)
(-)25-101-97-08 (ENKO Arou 001.19) — *HoChyMin*: (-)25-101-97-13

09

09-39-44 (KALA Arou 001.15)
09-55-67-05 (CYPR? Psce 004) — *HoChyMin*: ••-••-67-05
09-69 (ENKO Abou 032)
09-70-26-75 (ENKO Arou 001.09-10)
04-09-88-08-07-21(-) (ENKO Arou 001.13) — *HoChyMin*: 04-09-88-13-07-21
38-09-75-07-21 (ENKO Arou 001.11)
53-09-70-12-23 (ENKO Arou 001.03)
102-09-82-85 (ENKO Abou 081)
102-09-82-85-15 (ENKO Abou 051)
104-09-06-09 (ENKO Abou 080)
27-69-09-88-23 (CYPR Mvas 003) — *HoChyMin*: 27-69-09-88-23
46-25-09-04[(KALA Arou 004.02)
38-107-09-41 (ENKO Abou 006)
55-02-09-72 (PSIL Asta 001) — *HoChyMin*: 55-02-09-72

59-17-09-44[(ENKO Abou 083) — *HoChyMin*: 59-17-09-44[
81-13-09-72 (ENKO Abou 067) — *HoChyMin*: 81-08-09-72
23-72-12-09-72 (ENKO Abou 022)
23-73-55-09-73 (ENKO Abou 023)
110-97-107-09-27 (ENKO Abou 043) — *HoChyMin*: 110-68-107-09-27
38-87-87-04-09-69-23 (ATHI Avas 001)
64-09 (ENKO Abou 063)
99-09 (KALA Arou 005.04)
82-50-09 (ENKO Abou 002)
104-09-06-09 (ENKO Abou 080)

11

11-06-53-96(-) (ENKO Arou 001.24)
104-11-24-06-12-23 (ENKO Arou 001.06)
107-11-24-107-27-69-23 (ENKO Arou 001.12-13)
97-82-11 (ENKO Apes 001)

12

12-24-110-97 (ENKO Abou 078)
12-25 (ENKO Arou 001.08)
04-36-12-69 (⌊ 05) / 04-36-12-70-05 (ENKO Abou 071) — *HoChyMin*: 04-36-12-69
23-72-12-09-72 (ENKO Abou 022)
27-50-12-05-102-87-13 (ENKO Abou 061) — *HoChyMin*: 27-50-12-05-102-87-78
46-53-12-23 (ENKO Arou 001.07-08)
53-09-70-12-23 (ENKO Arou 001.03)
104-11-24-06-12-23 (ENKO Arou 001.06)
06-12 (CYPR Mvas 002)
23-12 (KITI Avas 012)
25-12 (ENKO Abou 059)
68-12 or 12-68 (CYPR? Psce 002) — *HoChyMin*: 68-12
27-50-12 (ENKO Abou 041)
]12 (TOUM Avas 001*c*.01)

12*b*

12*b*-04 (ENKO Abou 017)
12*b*-04-97 (ENKO Abou 026)

13

13 (ENKO Abou 046) — *HoChyMin*: 08
13-69 (KALA Arou 005.04) — *HoChyMin*: 08-69
13-72-04 (ENKO Abou 065) — *HoChyMin*: 08-72-04
04-13-••[ ]•• (KITI Abou 001) — *HoChyMin*: 04-08-104[ ]••
64-13-91-88 (ENKO Abou 063) — *HoChyMin*: 64-08-91-88
81-13-09-72 (ENKO Abou 067) — *HoChyMin*: 81-08-09-72
92-13-15-23 (CYPR Mvas 004) — *HoChyMin*: 92-08-15-23
44-04-13-69 (PARA Psce 001) — *HoChyMin*: 44-04-08-69
102-109-04-13-23 (CYPR Mvas 002)
102-109-04-13-23 (ENKO Mvas 002) — *HoChyMin*: 102-109-04-08-23
]06-23-13-23 (ENKO Avas 004)
25-13 (ENKO Abou 054) — *HoChyMin*: 25-08
15-17-13 (ENKO Abou 024, 027) — *HoChyMin*: 15-17-08
25-82-13 (ENKO Abou 054) — *HoChyMin*: 25-82-97-11-06
27-82-13 (ENKO Abou 022)
27-50-12-05-102-87-13 (ENKO Abou 061) — *HoChyMin*: 27-50-12-05-102-87-78

15

15 (ENKO Abou 024, 048)
15-17 (CYPR Mvas 003)
15-17-13 (ENKO Abou 024, 027) — *HoChyMin*: 15-17-08
15-17-23 (ENKO Mins 001)
46-15-85-88 (ENKO Abou 036)
46-15-86-34-53 (KALA Arou 001.06)
87-15-82 (ENKO Avas 002)
••-15-34-••-•• (KALA Arou 001.18)
92-13-15-23 (CYPR Mvas 004) — *HoChyMin*: 92-08-15-23
]••-15-••-••-••-27 (ENKO Pblo 001) — *HoChyMin*:]12-15-••-••-••-27
23-15 (ENKO Abou 034)
102-09-82-85-15 (ENKO Abou 051)

17

]17/46-06-97 (ARPE Avas 001) — *HoChyMin*:]46-06-97
15-17-13 (ENKO Abou 024, 027) — *HoChyMin*: 15-17-08
15-17-23 (ENKO Mins 001)
59-17-09-44[(ENKO Abou 083) — *HoChyMin*: 59-17-09-44[
]35-17-23 (MAAP Avas 004) — *HoChyMin*:]••-21-23
]109-17-•• (TOUM Avas 001*c*.02)
44-17[(ENKO Aost 002)
15-17 (CYPR Mvas 003)
46-17 (ENKO Abou 035)
46-70-17 (ENKO Abou 073) — *HoChyMin*: 46-70-17

19

19 (ENKO Abou 001)
19 (ENKO Arou 001.05)
19-23-69-07-21 (ENKO Arou 001.20-21)
    82-04-19-86 (KITI Abou 001)
    44-61-97-19-110 (ENKO Abou 044)
        102-19 (ENKO Avas 006)
        107-19 (KITI Avas 019) — *HoChyMin*: 107-19
        (-)19-73-25-23(-) (ENKO Arou 001.14)

21

21 (ENKO Avas 014)
    35-21-97-23 (ENKO Arou 001.19-20)
    39-21-08 (ENKO Arou 001.18) — *HoChyMin*: 39-21-13
    73-21-46-25-44 (KALA Arou 001.13)
    110-23-59(-21-)23 (KITI Iins 001) — *HoChyMin*: 110-23-59-21-23
        04-09-88-08-07-21(-) (ENKO Arou 001.13) — *HoChyMin*: 04-09-88-13-07-21
        25-21 (PYLA Mins 001)
        38-21 (ENKO Arou 001.11-12)
        41-28-21 (ENKO Abou 003) — *HoChyMin*: 41-28-21
        19-23-69-07-21 (ENKO Arou 001.20-21)
        38-09-75-07-21 (ENKO Arou 001.11)
        ]••-21 (KITI Avas 017)

23

23 (ENKO Abou 049; ENKO Avas 014; KITI Avas 006, 008, 010, 013, 014, 018; KITI Mexv 001; ENKO Mlin 001, 003)
23 (ENKO Abou 045)
23-02 (ENKO Avas 007)
23-12 (KITI Avas 012)
23-15 (ENKO Abou 034)
23-55-96-30 or 30-96-55-23 (PYLA Psce 001) — *HoChyMin*: 23-55-96-30
23-69-30-96-72[(KALA Arou 005.05)
23-70(-), or (-)70-23 (CYPR? Psce 006) — *HoChyMin*: 15-70(-)••-••
23-72-12-09-72 (ENKO Abou 022)
23-73-55-09-73 (ENKO Abou 023)
23-73-•• / ••-73-23 (ENKO Psce 001.01) — *HoChyMin*: 23-73-••
23-82[(ENKO Avas 008)
23/33-87-53 (HALA Psce 001) — *HoChyMin*: 53-87-33
23-92-97 (KITI Iins 002.b)
23-•• (KITI Avas 007, 009)

23[(KITI Iins 002.b)
]23-69-70 or 70-69-23[(CYPR? Psce 001) — *HoChyMin*: 70-69-23[
01-23-72-85 (ENKO Abou 040)
01-23-72-85 (ENKO Abou 066)
01-23-72-85 (ENKO Abou 064)
08-23-25-••[(PYLA Mlin 001) — *HoChyMin*: 13-23-25-••[
19-23-69-07-21 (ENKO Arou 001.20-21)
46-23••-50-87-86 (KALA Arou 001.10)
102-23-91-01 (KALA Arou 001.04)
110-23-59 (ENKO Abou 062)
110-23-59(-21-)23 (KITI Iins 001) — *HoChyMin*: 110-23-59-21-23
34-91-23-72-23-82-86 (KALA Arou 001.012) — *HoChyMin*: 35-91-23-72-23-82-86
102-36-23-114-23 (ENKO Mlin 002.02)
102-75-23-••[(KALA Arou 004.03)
38-87-103-23-69-23 (ENKO Arou 001.01)
05-37-97-23-46 (KITI Avas 001) — *HoChyMin*: 05-37-97-23-46
34-91-23-72-23-82-86 (KALA Arou 001.012) — *HoChyMin*: 35-91-23-72-23-82-86
102-06-23-••-•• (ENKO Abou 075) — *HoChyMin*: 101-06-23-••-••
]06-23-13-23 (ENKO Avas 004)
]73-23-••-••[(ALAS Avas 001)
06-23 (ENKO? Psce 002; KITI Avas 015)
50-23 (KALA Arou 001.16)
102-23 (ENKO Mlin 002.01)
15-17-23 (ENKO Mins 001)
36-••-23 (KALA Arou 001.07)
38-46-23 (MARO Avas 001) — *HoChyMin*: 38-46-23
70-114-23 (KALA Avas 002) — *HoChyMin*: 70-82-23
73-87-23 (KALA Arou 001.06)
104-72-23 (ENKO Mins 001)
107-104-23 (KITI Iins 001.01)
107-110-23 (ENKO Abou 050)
108-99-23 (CYPR? Psce 005) — *HoChyMin*: 108-99-23
27-73-64-23 (ENKO Avas 003)
35-21-97-23 (ENKO Arou 001.19-20)
44-27-97-23 (MARO Avas 001) — *HoChyMin*: 44-27-68-23
44-88-97-23 (ENKO Arou 001.23)
46-53-12-23 (ENKO Arou 001.07-08)
82-96-88-23 (ENKO Arou 001.02, 09, 26)
82-103-99-23 (ENKO Abou 038)
82-109-64-23 (ENKO Mvas 001)
104-72(-)••-•• (KALA Arou 005.01)
92-13-15-23 (CYPR Mvas 004) — *HoChyMin*: 92-08-15-23
27-08-110-97-23 (ENKO Arou 001.04-05; KOUR Psce 001)
27-69-09-88-23 (CYPR Mvas 003) — *HoChyMin*: 27-69-09-88-23
53-09-70-12-23 (ENKO Arou 001.03)
82-06-82-88-23 (PPAP Mvas 001)
(102-)82-85-88-97-23 (ENKO Avas 005) — *HoChyMin*: 102-82-69-88-97-23

102-36-23-114-23 (ENKO Mlin 002.02)
102-109-04-13-23 (CYPR Mvas 002)
102-109-04-13-23 (ENKO Mvas 002) — *HoChyMin*: 102-109-04-08-23
104-72-87-99-23 (KALA Arou 001.01)
110-23-59(-21-)23 (KITI Iins 001) — *HoChyMin*: 110-23-59-21-23
38-87-103-23-69-23 (ENKO Arou 001.01)
104-11-24-06-12-23 (ENKO Arou 001.06)
38-87-87-04-09-69-23 (ATHI Avas 001)
107-11-24-107-27-69-23 (ENKO Arou 001.12-13)
]35-17-23 (MAAP Avas 004) — *HoChyMin*:]••-21-23
]06-23-13-23 (ENKO Avas 004)
(-)19-73-25-23(-) (ENKO Arou 001.14)

24

24 (HALA Abou 001) — *HoChyMin*: (102-87-107-97-)82-08
24-37 (ENKO Avas 012)
24-••-••-••-••-••-••-•• (KALA Arou 001.17)
12-24-110-97 (ENKO Abou 078)
104-24-91 (KALA Arou 001.01)
104-24-91 (KALA Arou 001.13)
104-24-91 (KALA Arou 001.18)
104-24-91[(KALA Arou 004.01) — *HoChyMin*: 104-24-91[
••-24-91 (KALA Arou 005.01)
104-11-24-06-12-23 (ENKO Arou 001.06)
107-11-24-107-27-69-23 (ENKO Arou 001.12-13)
104-24[(KALA Arou 003.01)
64-05-24 (ENKO Abou 067, 072; HALA Abou 002)
87-82-24 (ENKO Abou 030)

25

25 (ENKO Abou 005, 031, 077; ENKO Avas 014)
25-04-99-07 (ENKO Arou 001.24)
25-12 (ENKO Abou 059)
25-13 (ENKO Abou 054) — *HoChyMin*: 25-08
25-21 (PYLA Mins 001)
25-25 (HALA Avas 001)
25-67[(MYRT Avas 002) — *HoChyMin*: 25-67
25-82-13 (ENKO Abou 054) — *HoChyMin*: 25-82-97-11-06
]25-06-27-25-97[(ENKO Avas 001)
(-)25-101-97-08 (ENKO Arou 001.19) — *HoChyMin*: (-)25-101-97-13
(-)25-103-69(-) (ENKO Arou 001.16-17, 25, 27)
06-25-82-97 (ENKO Abou 055) — *HoChyMin*: 06-25-82-97
25-25 (HALA Avas 001)
(••-)28-25-96 (ENKO Abou 007) — *HoChyMin*: ••-28-25-96
46-25-09-04[(KALA Arou 004.02)

82-25-82 (CYPR? Psce 001)
102-25-97-•• (ENKO Abou 028)
(-)103-25-75(-) (ENKO Arou 001.15-16)
(-)103-25-101-97-08 (ENKO Arou 001.18-19) — *HoChyMin*: (-)103-25-101-97-13
08-23-25-••[(PYLA Mlin 001) — *HoChyMin*: 13-23-25-••[
73-21-46-25-44 (KALA Arou 001.13)
(-)19-73-25-23(-) (ENKO Arou 001.14)
]25-06-27-25-97[(ENKO Avas 001)
12-25 (ENKO Arou 001.08)
04-87-25 (ENKO Arou 001.10, 14-15, 17, 23)

26

26-08 (ENKO Arou 001.07) — *HoChyMin*: 26-13
(-)69-26-50-69(-) (ENKO Arou 001.26-27)
09-70-26-75 (ENKO Arou 001.09-10)
04-26 (KITI Avas 002)
44-26(-) (ENKO Arou 001.14)

27

27 (ENKO Abou 069; ENKO Psce 001.02)
27-04-103 or 27 ⌊ 103 (ENKO Abou 020) — *HoChyMin*: 27-04-103
27-06-97 (ENKO Abou 019)
27-08-70 (ENKO Abou 053) — *HoChyMin*: 27-13-70
27-08-110-97-23 (ENKO Arou 001.04-05; KOUR Psce 001)
27-28 (KITI Avas 004)
27-41 (ENKO Aost 002)
27-50-12 (ENKO Abou 041)
27-50-12-05-102-87-13 (ENKO Abou 061) — *HoChyMin*: 27-50-12-05-102-87-78
27-69-09-88-23 (CYPR Mvas 003) — *HoChyMin*: 27-69-09-88-23
27-72 (KITI Avas 011)
27-73-64-23 (ENKO Avas 003)
27-82-13 (ENKO Abou 022)
27-86-01-06 (KALA Arou 001.11)
27-••[(TOUM Avas 001*a*.01)
38-27-06 (KATY Avas 001) — *HoChyMin*: 38-27-06
44-27-97-23 (MARO Avas 001) — *HoChyMin*: 44-27-68-23
64-27-04-06 (ATHI Adis 001)
73-27-53 (ENKO Abou 012) — *HoChyMin*: 75-27-53
102-27-70-86 (ENKO Abou 029)
06-73-110-27-05 (ENKO Abou 018)
107-11-24-107-27-69-23 (ENKO Arou 001.12-13)
]25-06-27-25-97[(ENKO Avas 001)
]44-33-27-••[(KALA Arou 002.05)

28-27 (KITI Avas 003, 005)
107-27 (ENKO Abou 012)
110-97-107-09-27 (ENKO Abou 043) — *HoChyMin*: 110-68-107-09-27
08-97[ ]••-27 (KALA Arou 005.03) — *HoChyMin*: 13-97[ ]••-27
]••-15-••-••-••-27 (ENKO Pblo 001) — *HoChyMin*:]12-15-••-••-••-27

28

28-27 (KITI Avas 003, 005)
(••-)28-25-96 (ENKO Abou 007) — *HoChyMin*: ••-28-25-96
41-28-21 (ENKO Abou 003) — *HoChyMin*: 41-28-21
91-28-••[(KITI Pblo 001)
102-87-28-110 (MYRT Avas 001)
27-28 (KITI Avas 004)

30

30-110 or 110-30 (CYPR? Psce 002) — *HoChyMin*: 30-110
23-69-30-96-72[(KALA Arou 005.05)
]99-30-96 (KALA Arou 005.05)
23-55-96-30 or 30-96-55-23 (PYLA Psce 001) — *HoChyMin*: 23-55-96-30

33

(-)23/33-87-53 (HALA Psce 001) — *HoChyMin*: 53-87-33
33-91 (KALA Arou 001.03)
••-33-64/50 (KALA Arou 005.03)
96-110-33-55, or 55-33-110-96 (KALA Mbij 001, 002) — *HoChyMin*: 96-110-33-55
110-82-33-70 (KALA Arou 001.15)
]44-33-27-••[(KALA Arou 002.05)

34

102-34-72 (KALA Arou 001.14)
110-34-73-50 (ENKO Abou 047)
50-46-34-97 (ENKO Abou 027)
••-15-34-••-•• (KALA Arou 001.18)
46-15-86-34-53 (KALA Arou 001.06)
36-34 (KALA Arou 001.04)
110-96-34 (ENKO Abou 025)

35

35 (ENKO Abou 059)
35-21-97-23 (ENKO Arou 001.19-20)
34-91-23-72-23-82-86 (KALA Arou 001.012) — *HoChyMin*: 35-91-23-72-23-82-86
35-••[(KALA Arou 005.06)
35[(KALA Arou 003.16)
]35-17-23 (MAAP Avas 004) — *HoChyMin*:]••-21-23

36

36-34 (KALA Arou 001.04)
36-72-91-46 (KALA Arou 001.05)
36-86-••-••-••[(KALA Arou 001.09)
36-••-23 (KALA Arou 001.07)
    04-36-12-69 (| 05) / 04-36-12-70-05 (ENKO Abou 071) — *HoChyMin*: 04-36-12-69
    102-36-23-114-23 (ENKO Mlin 002.02)
        104-36 (KALA Arou 001.03)

37

    05-37-97-23-46 (KITI Avas 001) — *HoChyMin*: 05-37-97-23-46
    44-37-97(-) (ENKO Arou 001.15)
    102-37-08 (ENKO Abou 010) — *HoChyMin*: 101-37-08
    04-104-37-53 (ENKO Abou 032)
        24-37 (ENKO Avas 012)

38

38 (KITI Avas 016; CYPR Mvas 004; MYRT Mvas 001, 002)
38-05 (KALA Avas 001)
38-05[(ENKO Avas 009)
38-09-75-07-21 (ENKO Arou 001.11)
38-21 (ENKO Arou 001.11-12)
38-27-06 (KATY Avas 001) — *HoChyMin*: 38-27-06
38-46-23 (MARO Avas 001) — *HoChyMin*: 38-46-23
38-73 (MAAP Avas 001) — *HoChyMin*: 38-••
38-87-87-04-09-69-23 (ATHI Avas 001)
38-87-103-23-69-23 (ENKO Arou 001.01)
38-107-09-41 (ENKO Abou 006)
    01-38 (or 38-01?) (MAAP Avas 003) — *HoChyMin*: 01-38

39

39 (ENKO Abou 052)
39 (IDAL Avas 002)
39-06 (KALA Arou 001.05)
39-21-08 (ENKO Arou 001.18) — *HoChyMin*: 39-21-13
39-87-86 (KALA Arou 001.03)
    09-39-44 (KALA Arou 001.15)
    107-39-••[(ENKO Abou 076)
    110-39-97 (ENKO Abou 018)

41

41-28-21 (ENKO Abou 003) — *HoChyMin*: 41-28-21
41-41-97 (ENKO Arou 001.10-11; IDAL Avas 001)
41-41-97 (IDAL Avas 001) — *HoChyMin*: 41-41-68
41-110 or 110-41 (SALA Psce 001) — *HoChyMin*: ••-110
    41-41-97 (ENKO Arou 001.10-11; IDAL Avas 001)
    41-41-97 (IDAL Avas 001) — *HoChyMin*: 41-41-68
        ]41 (ENKO Aost 002)
        27-41 (ENKO Aost 002)
        38-107-09-41 (ENKO Abou 006)

44

44 (ENKO Abou 035)
44-04-13-69 (PARA Psce 001) — *HoChyMin*: 44-04-08-69
44-17[(ENKO Aost 002)
44-27-97-23 (MARO Avas 001) — *HoChyMin*: 44-27-68-23
44-37-97(-) (ENKO Arou 001.15)
44-61-97 (ENKO Abou 017, 048)
44-61-97-19-110 (ENKO Abou 044)
44-88-97-23 (ENKO Arou 001.23)
]44-33-27-••[(KALA Arou 002.05)
        ]••-••-44[(KALA Arou 002.06)
        59-17-09-44[(ENKO Abou 083) — *HoChyMin*: 59-17-09-44[
        09-39-44 (KALA Arou 001.15)
        ••-••-44 (KALA Arou 001.09)
        73-21-46-25-44 (KALA Arou 001.13)

46

46 (ENKO Abou 055, 072)
46-08/01 (KALA Arou 001.04)

46-15-85-88 (ENKO Abou 036)
46-15-86-34-53 (KALA Arou 001.06)
46-17 (ENKO Abou 035)
46-23••-50-87-86 (KALA Arou 001.10)
46-24-04-23(-) (ENKO Arou 001.21)
46-25-09-04[(KALA Arou 004.02)
46-53-12-23 (ENKO Arou 001.07-08)
46-70-17 (ENKO Abou 073) — *HoChyMin*: 46-70-17
46-88-70 (KALA Arou 001.11)
46-112 (ENKO Aost 002)
]17/46-06-97 (ARPE Avas 001) — *HoChyMin*:]46-06-97
    38-46-23 (MARO Avas 001) — *HoChyMin*: 38-46-23
    50-46-34-97 (ENKO Abou 027)
    110-46-97 (ENKO Abou 034) — *HoChyMin*: 110-46-97
    ••-]46-96-68-72[(KALA Arou 005.02)
    73-21-46-25-44 (KALA Arou 001.13)
    ]110-46-110[(KALA Ppla 002) — *HoChyMin*:]110-46-110[
        70-••-46 (KALA Arou 001.02)
        36-72-91-46 (KALA Arou 001.05)
        05-37-97-23-46 (KITI Avas 001) — *HoChyMin*: 05-37-97-23-46
        06-06-04-99-46 (ENKO Abou 082)

50

50 (ENKO Abou 041, 056)
50-23 (KALA Arou 001.16)
50-46-34-97 (ENKO Abou 027)
50/64-61-86 (IDAL Avas 002) — *HoChyMin*: 39-64-61-86
    27-50-12-05-102-87-13 (ENKO Abou 061) — *HoChyMin*: 27-50-12-05-102-87-78
    27-50-12 (ENKO Abou 041)
    82-50-09 (ENKO Abou 002)
    46-23••-50-87-86 (KALA Arou 001.10)
    81-110-109-50-72 (KITI Ipla 001.*r*) — *HoChyMin*: 81-110-109-64-72
        ••-33-64/50 (KALA Arou 005.03)
        102-04-08-50 (ENKO Abou 005) — *HoChyMin*: 101-04-13-50
        110-34-73-50 (ENKO Abou 047)

53

53 (ENKO Abou 015) — *HoChyMin*: ••
53-09-70-12-23 (ENKO Arou 001.03)
53-107-99 (ENKO Abou 004)
    46-53-12-23 (ENKO Arou 001.07-08)
    56-53-82-102 or 102-82-53-56 (KATY Avas 002) — *HoChyMin*: 56-53-82-102
    11-06-53-96(-) (ENKO Arou 001.24)
    110-102-53-04 (ENKO Arou 001.03-04)

]102-04-53-70 (KITI Iins 002.a)
23/33-87-53 (HALA Psce 001) — *HoChyMin*: 53-87-33
73-27-53 (ENKO Abou 012) — *HoChyMin*: 75-27-53
04-104-37-53 (ENKO Abou 032)
46-15-86-34-53 (KALA Arou 001.06)

55

55 (ENKO Abou 003)
55-02-09-72 (PSIL Asta 001) — *HoChyMin*: 55-02-09-72
55-96-98[(ARPE Avas 001) — *HoChyMin*: 55-96-••[
23-55-96-30 or 30-96-55-23 (PYLA Psce 001) — *HoChyMin*: 23-55-96-30
09-55-67-05 (CYPR? Psce 004) — *HoChyMin*: ••-••-67-05
23-73-55-09-73 (ENKO Abou 023)
96-110-33-55 o 55-33-110-96 (KALA Mbij 001, 002) — *HoChyMin*: 96-110-33-55

56

56-53-82-102, or 102-82-53-56 (KATY Avas 002) — *HoChyMin*: 56-53-82-102

59

59-17-09-44[(ENKO Abou 083) — *HoChyMin*: 59-17-09-44[
82-102-59-08 (ENKO Abou 077)
110-23-59(-21-)23 (KITI Iins 001) — *HoChyMin*: 110-23-59-21-23
]••-59-04 (KALA Arou 002.04)
110-23-59 (ENKO Abou 062)

61

61-85-88 (ENKO Abou 068)
61-82 (ENKO? Mins 002)
44-61-97 (ENKO Abou 017, 048)
44-61-97-19-110 (ENKO Abou 044)
50/64-61-86 (IDAL Avas 002) — *HoChyMin*: 39-64-61-86
82-61-06-99 (ENKO Abou 010) — *HoChyMin*: 107-••-••-••-82-61-06-99
110-61 (KOUR Avas 004)

63

]63 (KOUR Avas 003)

110-63 (KOUR Avas 001)
110-63 (KOUR Avas 002)

64

64 (ENKO Abou 064)
64 (ENKO Avas 011, twice)
64/107 (ENKO Abou 067) — *HoChyMin*: 61
64-05-24 (ENKO Abou 067, 072; HALA Abou 002)
64-09 (ENKO Abou 063)
64-13-91-88 (ENKO Abou 063) — *HoChyMin*: 64-08-91-88
64-27-04-06 (ATHI Adis 001)
50/64-61-86 (IDAL Avas 002) — *HoChyMin*: 39-64-61-86
••-33-64/50 (KALA Arou 005.03)
27-73-64-23 (ENKO Avas 003)
82-109-64-23 (ENKO Mvas 001)

67

102-06-67-91-72 (ENKO Abou 057)
09-55-67-05 (CYPR? Psce 004) — *HoChyMin*: ••-••-67-05
25-67[(MYRT Avas 002) — *HoChyMin*: 25-67
104-72-67 (CYPR Mvas 001) — *HoChyMin*: 104-72-67
102-97-110-67 (ENKO Abou 049) — *HoChyMin*: 102-68-110-67
104-72-08-67 (ENKO Abou 046) — *HoChyMin*: 104-72-13-67

68

68-12, or 12-68 (CYPR? Psce 002) — *HoChyMin*: 68-12
••-]46-96-68-72[(KALA Arou 005.02)
]••-05-68-104[(ENKO Aost 002)

69

(-)69-26-50-69(-)(ENKO Arou 001.26-27)
23-69-30-96-72[(KALA Arou 005.05)
27-69-09-88-23 (CYPR Mvas 003) — *HoChyMin*: 27-69-09-88-23
19-23-69-07-21 (ENKO Arou 001.20-21)
38-87-103-23-69-23 (ENKO Arou 001.01)
38-87-87-04-09-69-23 (ATHI Avas 001)
107-11-24-107-27-69-23 (ENKO Arou 001.12-13)
]23-69-70 or 70-69-23[(CYPR? Psce 001) — *HoChyMin*: 70-69-23[
09-69 (ENKO Abou 032)
13-69 (KALA Arou 005.04) — *HoChyMin*: 08-69
25-103-69(-)(ENKO Arou 001.25)

04-36-12-69 (⌊ 05) / 04-36-12-70-05 (ENKO Abou 071) — *HoChyMin*: 04-36-12-69
44-04-13-69 (PARA Psce 001) — *HoChyMin*: 44-04-08-69
(-)69-26-50-69(-) (ENKO Arou 001.26-27)
(-)103-25-75-103-27-69(-) (ENKO Arou 001.15-16)

70

70-114-23 (KALA Avas 002) — *HoChyMin*: 70-82-23
70-••-46 (KALA Arou 001.02)
09-70-26-75 (ENKO Arou 001.09-10)
46-70-17 (ENKO Abou 073) — *HoChyMin*: 46-70-17
53-09-70-12-23 (ENKO Arou 001.03)
102-27-70-86 (ENKO Abou 029)
04-36-12-69 (⌊ 05), or 04-36-12-70-05 (ENKO Abou 071) — *HoChyMin*: 04-36-12-69
23-70(-), or (-)70-23 (CYPR? Psce 006) — *HoChyMin*: 15-70(-)••-••
27-08-70 (ENKO Abou 053) — *HoChyMin*: 27-13-70
46-88-70 (KALA Arou 001.11)
110-82-33-70 (KALA Arou 001.15)
]23-69-70 or 70-69-23[(CYPR? Psce 001) — *HoChyMin*: 70-69-23[
]102-04-53-70 (KITI Iins 002.a)

72

13-72-04 (ENKO Abou 065) — *HoChyMin*: 08-72-04
23-72-12-09-72 (ENKO Abou 022)
36-72-91-46 (KALA Arou 001.05)
87-72[(KATY Avas 003)
104-72-08-67 (ENKO Abou 046) — *HoChyMin*: 104-72-13-67
104-72-23 (ENKO Mins 001)
104-72(-)••-•• (KALA Arou 005.01)
104-72-67 (CYPR Mvas 001) — *HoChyMin*: 104-72-67
104-72-87-99-23 (KALA Arou 001.01)
••-72-87-••-••[(KALA Arou 001.08)
01-23-72-85 (ENKO Abou 040)
01-23-72-85 (ENKO Abou 066)
01-23-72-85 (ENKO Abou 064)
34-91-23-72-23-82-86 (KALA Arou 001.012) — *HoChyMin*: 35-91-23-72-23-82-86
23-69-30-96-72[(KALA Arou 005.05)
••-]46-96-68-72[(KALA Arou 005.02)
]72 (ENKO Aost 002)
27-72 (KITI Avas 011)
102-34-72 (KALA Arou 001.14)
55-02-09-72 (PSIL Asta 001) — *HoChyMin*: 55-02-09-72
81-13-09-72 (ENKO Abou 067) — *HoChyMin*: 81-08-09-72
23-72-12-09-72 (ENKO Abou 022)

81-110-109-50-72 (KITI Ipla 001.*r*) — *HoChyMin*: 81-110-109-64-72
102-06-67-91-72 (ENKO Abou 057)

73

73 (ENKO Abou 073)
73-21-46-25-44 (KALA Arou 001.13)
73-27-53 (ENKO Abou 012) — *HoChyMin*: 75-27-53
73-82 (ENKO Arou 001.02)
73-87-23 (KALA Arou 001.06)
73-96 (ENKO Abou 013) — *HoChyMin*: 75-96
73-97 (ENKO Arou 001.20)
]73-23-••-••[(ALAS Avas 001)
06-73-110-27-05 (ENKO Abou 018)
(-)19-73-25-23(-) (ENKO Arou 001.14)
23-73-55-09-73 (ENKO Abou 023)
27-73-64-23 (ENKO Avas 003)
23-73-•• / ••-73-23 (ENKO Psce 001.01) — *HoChyMin*: 23-73-••
102-73-04-97 (ENKO Abou 045)
102-73-04-97 (ENKO Avas 002)
102-73-04-97 (ENKO Abou 015) — *HoChyMin*: 102-73-04-97
102-73-04-97-23 (KITI Ipla 001.*v*)
102-73-04-97-110-73 (ENKO Abou 021)
110-73-85 (ENKO Abou 037)
110-34-73-50 (ENKO Abou 047)
38-73 (MAAP Avas 001) — *HoChyMin*: 38-••
(l. 01); 27 (l. 02)
23-73-55-09-73 (ENKO Abou 023)
102-73-04-97-110-73 (ENKO Abou 021)

75

82-75-99 (ENKO Arou 001.05, 25, 27)
102-75-23-••[(KALA Arou 004.03)
38-09-75-07-21 (ENKO Arou 001.11)
09-70-26-75 (ENKO Arou 001.09-10)

81

81-13-09-72 (ENKO Abou 067) — *HoChyMin*: 81-08-09-72
81-97 (ENKO Abou 059, 076)
81-110-109-50-72 (KITI Ipla 001.*r*) — *HoChyMin*: 81-110-109-64-72
81[(KALA Arou 002.04)

82

82 (ENKO Abou 053; ENKO Arou 001.08; KITI Mexv 001)
82-04-19-86 (KITI Abou 001)
82-06-82-88-23 (PPAP Mvas 001)
82-25-82 (CYPR? Psce 001)
82-50-09 (ENKO Abou 002)
82-61-06-99 (ENKO Abou 010) — *HoChyMin*: 107-••-••-••-82-61-06-99
82-75-99 (ENKO Arou 001.05, 25, 27)
(102-)82-85-88-97-23 (ENKO Avas 005) — *HoChyMin*: 102-82-69-88-97-23
82-96-88 (ENKO Abou 031) — *HoChyMin*: 82-95-88
82-96-88 (KITI Iins 001.02) — *HoChyMin*: 82-95-88
82-96-88-23 (ENKO Arou 001.02, 09, 26)
82-97 (ENKO Abou 033)
82-102-59-08 (ENKO Abou 077)
82-103-99-23 (ENKO Abou 038)
82-109-64-23 (ENKO Mvas 001)

- ••-82(-) (HALA Psce 001) — *HoChyMin*: 53-87-33 82-••
- 25-82-13 (ENKO Abou 054) — *HoChyMin*: 25-82-97-11-06
- 27-82-13 (ENKO Abou 022)
- 87-82-24 (ENKO Abou 030)
- 97-82-11 (ENKO Apes 001)
- 110-82-33-70 (KALA Arou 001.15)
- 06-25-82-97 (ENKO Abou 055) — *HoChyMin*: 06-25-82-97
- 04-88-82-••-••-•• (KALA Arou 001.07)
- 56-53-82-102 or 102-82-53-56 (KATY Avas 002) — *HoChyMin*: 56-53-82-102
- 82-06-82-88-23 (PPAP Mvas 001)
- 102-09-82-85 (ENKO Abou 081)
- 102-09-82-85-15 (ENKO Abou 051)
- 34-91-23-72-23-82-86 (KALA Arou 001.012) — *HoChyMin*: 35-91-23-72-23-82-86
    - 23-82[(ENKO Avas 008)
    - 61-82 (ENKO? Mins 002)
    - 73-82 (ENKO Arou 001.02)
    - 82-25-82 (CYPR? Psce 001)
    - 87-15-82 (ENKO Avas 002)
    - 104-99-82 (ENKO Abou 001)

85

- 01-85-88-112 (ENKO Abou 039)
- 61-85-88 (ENKO Abou 068)
- 46-15-85-88 (ENKO Abou 036)
- (102-)82-85-88-97-23 (ENKO Avas 005) — *HoChyMin*: 102-82-69-88-97-23
- 102-09-82-85-15 (ENKO Abou 051)
    - 102-85 (KITI Ipla 001.*v*)
    - 110-73-85 (ENKO Abou 037)
    - 01-23-72-85 (ENKO Abou 040)
    - 01-23-72-85 (ENKO Abou 066)

01-23-72-85 (ENKO Abou 064)
102-09-82-85 (ENKO Abou 081)

86

27-86-01-06 (KALA Arou 001.11)
36-86-••-••-••[(KALA Arou 001.09)
103-86-91 (KALA Arou 001.14)
46-15-86-34-53 (KALA Arou 001.06)
••-86 (KALA Arou 001.07)
39-87-86 (KALA Arou 001.03)
50/64-61-86 (IDAL Avas 002) — *HoChyMin*: 39-64-61-86
82-04-19-86 (KITI Abou 001)
102-27-70-86 (ENKO Abou 029)
46-23••-50-87-86 (KALA Arou 001.10)
34-91-23-72-23-82-86 (KALA Arou 001.012) — *HoChyMin*: 35-91-23-72-23-82-86

87

87-15-82 (ENKO Avas 002)
87-72[(KATY Avas 003)
87-82-24 (ENKO Abou 030)
87[(KALA Arou 003.14)
04-87-25 (ENKO Arou 001.10, 14-15, 17, 23)
23/33-87-53 (HALA Psce 001) — *HoChyMin*: 53-87-33
38-87-87-04-09-69-23 (ATHI Avas 001)
38-87-103-23-69-23 (ENKO Arou 001.01)
39-87-86 (KALA Arou 001.03)
73-87-23 (KALA Arou 001.06)
102-87-28-110 (MYRT Avas 001)
102-87-104-97 (ENKO Abou 069)
102-87-107-97 (ENKO Abou 052)
102-87-107-97 (HALA Abou 001) — *HoChyMin*: 102-87-107-97-82-08
102-87-••-97 (ENKO Abou 042) — *HoChyMin*: 102-87-104-97
38-87-87-04-09-69-23 (ATHI Avas 001)
104-72-87-99-23 (KALA Arou 001.01)
••-72-87-••-••[(KALA Arou 001.08)
46-23••-50-87-86 (KALA Arou 001.10)
27-50-12-05-102-87-13 (ENKO Abou 061) — *HoChyMin*: 27-50-12-05-102-87-78

88

04-88-82-••-••-•• (KALA Arou 001.07)
44-88-97-23 (ENKO Arou 001.23)

46-88-70 (KALA Arou 001.11)
••-88-104-97 (ENKO Abou 060) — *HoChyMin*: ••-87-104-97
04-09-88-08-07-21(-) (ENKO Arou 001.13) — *HoChyMin*: 04-09-88-13-07-21
(102-)82-85-88-97-23 (ENKO Avas 005) — *HoChyMin*: 102-82-69-88-97-23
82-96-88-23 (ENKO Arou 001.02, 09, 26)
01-85-88-112 (ENKO Abou 039)
27-69-09-88-23 (CYPR Mvas 003) — *HoChyMin*: 27-69-09-88-23
82-06-82-88-23 (PPAP Mvas 001)
]88-••-••[(KALA Arou 003.02)
61-85-88 (ENKO Abou 068)
82-96-88 (ENKO Abou 031) — *HoChyMin*: 82-95-88
46-15-85-88 (ENKO Abou 036)
64-13-91-88 (ENKO Abou 063) — *HoChyMin*: 64-08-91-88

91

91-28-••[(KITI Pblo 001)
34-91-23-72-23-82-86 (KALA Arou 001.012) — *HoChyMin*: 35-91-23-72-23-82-86
36-72-91-46 (KALA Arou 001.05)
64-13-91-88 (ENKO Abou 063) — *HoChyMin*: 64-08-91-88
102-23-91-01 (KALA Arou 001.04)
102-06-67-91-72 (ENKO Abou 057)
33-91 (KALA Arou 001.03)
104-91 (KALA Arou 001.02)
107-91 (KALA Arou 001.02)
103-86-91 (KALA Arou 001.14)
104-24-91 (KALA Arou 001.01)
104-24-91 (KALA Arou 001.13)
104-24-91 (KALA Arou 001.18)
104-24-91[(KALA Arou 004.01) — *HoChyMin*: 104-24-91[
••-24-91 (KALA Arou 005.01)

92

92-13-15-23 (CYPR Mvas 004) — *HoChyMin*: 92-08-15-23
23-92-97 (KITI Iins 002.b)

96

96 (ENKO Abou 021)
96-110-33-55 o 55-33-110-96 (KALA Mbij 001, 002) — *HoChyMin*: 96-110-33-55
55-96-98[(ARPE Avas 001) — *HoChyMin*: 55-96-••[
82-96-88 (ENKO Abou 031) — *HoChyMin*: 82-95-88
82-96-88 (KITI Iins 001) — *HoChyMin*: 82-95-88
82-96-88-23 (ENKO Arou 001.02, 09, 26)

110-96-34 (ENKO Abou 025)
23-55-96-30 or 30-96-55-23 (PYLA Psce 001) — *HoChyMin*: 23-55-96-30
••-]46-96-68-72[(KALA Arou 005.02)
23-69-30-96-72[(KALA Arou 005.05)
73-96 (ENKO Abou 013) — *HoChyMin*: 75-96
11-06-53-96(-) (ENKO Arou 001.24)
(••-)28-25-96 (ENKO Abou 007) — *HoChyMin*: ••-28-25-96
]99-30-96 (KALA Arou 005.05)

97

97-82-11 (ENKO Apes 001)
08-97[ ]••-27 (KALA Arou 005.03) — *HoChyMin*: 13-97[ ]••-27
102-97-110-67 (ENKO Abou 049) — *HoChyMin*: 102-68-110-67
110-97-107-09-27 (ENKO Abou 043) — *HoChyMin*: 110-68-107-09-27
05-37-97-23-46 (KITI Avas 001) — *HoChyMin*: 05-37-97-23-46
35-21-97-23 (ENKO Arou 001.19-20)
44-27-97-23 (MARO Avas 001) — *HoChyMin*: 44-27-68-23
44-61-97-19-110 (ENKO Abou 044)
44-88-97-23 (ENKO Arou 001.23)
102-25-97-•• (ENKO Abou 028)
27-08-110-97-23 (ENKO Arou 001.04-05; KOUR Psce 001)
102-73-04-97-23 (KITI Ipla 001.*v*)
102-73-04-97-110-73 (ENKO Abou 021)
]97-104-04-••-••-••[(ENKO Aost 002)
(-)25-101-97-08 (ENKO Arou 001.19) — *HoChyMin*: (-)25-101-97-13
04-13-••[ ]•• (KITI Abou 001) — *HoChyMin*: 04-08-104[ ]••
]25-06-27-25-97[(ENKO Avas 001)
73-97 (ENKO Arou 001.20)
81-97 (ENKO Abou 059, 076)
82-97 (ENKO Abou 033)
102-97 (ENKO Abou 065)
104-97 (MAAP Avas 002; HALA Psce 001)
107-97 (ENKO Avas 002)
04-04-97 (CYPR Mvas 002)
12*b*-04-97 (ENKO Abou 026)
23-92-97 (KITI Iins 002.b)
27-06-97 (ENKO Abou 019)
41-41-97 (ENKO Arou 001.10-11; IDAL Avas 001)
44-61-97 (ENKO Abou 017, 048)
41-41-97 (IDAL Avas 001) — *HoChyMin*: 41-41-68
44-37-97(-) (ENKO Arou 001.15)
110-39-97 (ENKO Abou 018)
110-46-97 (ENKO Abou 034) — *HoChyMin*: 110-46-97
06-25-82-97 (ENKO Abou 055) — *HoChyMin*: 06-25-82-97
12-24-110-97 (ENKO Abou 078)
50-46-34-97 (ENKO Abou 027)
102-73-04-97 (ENKO Abou 045)
102-73-04-97 (ENKO Avas 002)

102-73-04-97 (ENKO Abou 015) — *HoChyMin*: 102-73-04-97
102-87-104-97 (ENKO Abou 069)
102-87-107-97 (ENKO Abou 052)
102-87-107-97 (HALA Abou 001) — *HoChyMin*: 102-87-107-97-82-08
102-87-••-97 (ENKO Abou 042) — *HoChyMin*: 102-87-104-97
••-88-104-97 (ENKO Abou 060) — *HoChyMin*: ••-87-104-97
]17/46-06-97 (ARPE Avas 001) — *HoChyMin*:]46-06-97

98

98 (ENKO Aost 001; KALA Ppla 001) — *HoChyMin*: 201
55-96-98[(ARPE Avas 001) — *HoChyMin*: 55-96-••[
102-98 (ENKO Avas 010) — *HoChyMin*: 102-••

99

99-••[(KALA Arou 003.16)
99-09 (KALA Arou 005.04)
]99-30-96 (KALA Arou 005.05)
104-99-82 (ENKO Abou 001)
108-99-23 (CYPR? Psce 005) — *HoChyMin*: 108-99-23
25-04-99-07 (ENKO Arou 001.24)
82-103-99-23 (ENKO Abou 038)
06-06-04-99-46 (ENKO Abou 082)
104-72-87-99-23 (KALA Arou 001.01)
53-107-99 (ENKO Abou 004)
82-75-99 (ENKO Arou 001.05, 25, 27)
82-61-06-99 (ENKO Abou 010) — *HoChyMin*: 107-••-••-••-82-61-06-99

101

(-)25-101-97-08 (ENKO Arou 001.19) — *HoChyMin*: (-)25-101-97-13
110-101-53-04 (ENKO Arou 001.03-04)

102

102 (ENKO Abou 019, 026, 058; KITI Iins 001.02; ENKO Mlin 001, 003)
102(-82-85-88-97-23) (ENKO Avas 005) — *HoChyMin*: 102-82-69-88-97-23
102-04 (CYPR? Psce 003)
102-04-08-50 (ENKO Abou 005) — *HoChyMin*: 101-04-13-50
102-06-23-••-•• (ENKO Abou 075) — *HoChyMin*: 101-06-23-••-••
102-06-67-91-72 (ENKO Abou 057)
102-09-82-85 (ENKO Abou 081)
102-09-82-85-15 (ENKO Abou 051)
102-19 (ENKO Avas 006)

102-23 (ENKO Mlin 002.1)
102-23-91-01 (KALA Arou 001.04)
102-25-97-•• (ENKO Abou 028)
102-27-70-86 (ENKO Abou 029)
102-34-72 (KALA Arou 001.14)
102-36-23-114-23 (ENKO Mlin 002.02)
102-36[(ENKO Aost 002) — *HoChyMin*: 103-36[
102-37-08 (ENKO Abou 010) — *HoChyMin*: 101-37-08
102-73-04-97 (ENKO Abou 045)
102-73-04-97 (ENKO Avas 002)
102-73-04-97 (ENKO Abou 015) — *HoChyMin*: 102-73-04-97
102-73-04-97-23 (KITI Ipla 001.*v*)
102-73-04-97-110-73 (ENKO Abou 021)
102-75-23-••[(KALA Arou 004.03)
102-85 (KITI Ipla 001.*v*)
102-87-28-110 (MYRT Avas 001)
102-87-104-97 (ENKO Abou 069)
102-87-107-97 (ENKO Abou 052)
102-87-107-97 (HALA Abou 001) — *HoChyMin*: 102-87-107-97-82-08
102-87-••-97 (ENKO Abou 042) — *HoChyMin*: 102-87-104-97
102-97 (ENKO Abou 065)
102-97-110-67 (ENKO Abou 049) — *HoChyMin*: 102-68-110-67
102-98 (ENKO Avas 010) — *HoChyMin*: 102-••
102-109-04-13-23 (CYPR Mvas 002)
102-109-04-13-23 (ENKO Mvas 002) — *HoChyMin*: 102-109-04-08-23
102-•• (PPAP Vsce 001)
102[(ENKO Apla 001) — *HoChyMin*: 104[
102[(KALA Arou 003.15)
]102-04-53-70 (KITI Iins 002.a)
    82-102-59-08 (ENKO Abou 077)
    27-50-12-05-102-87-13 (ENKO Abou 061) — *HoChyMin*: 27-50-12-05-102-87-78
        56-53-82-102, or 102-82-53-56 (KATY Avas 002) — *HoChyMin*: 56-53-82-102
        104-101/102, or 101/102-104 (MYRT Mvas 001, 002) — *HoChyMin*: 104-101
        ]102[(TOUM Avas 001*b*)

103

(-)103-25-75(-) (ENKO Arou 001.15-16)
(-)103-27-69(-) (ENKO Arou 001.16)
(-)25-103-69(-) (ENKO Arou 001.16-17, 25, 27)
(-)103-25-101-97-08 (ENKO Arou 001.18-19) — *HoChyMin*: (-)103-25-101-97-13
103-86-91 (KALA Arou 001.14)
    82-103-99-23 (ENKO Abou 038)
    38-87-103-23-69-23 (ENKO Arou 001.01)
        27-04-103 or 27 | 103 (ENKO Abou 020) — *HoChyMin*: 27-04-103

104

104-07 (ENKO Arou 001.02-03)
104-09-06-09 (ENKO Abou 080)
104-11-24-06-12-23 (ENKO Arou 001.06)
104-24[(KALA Arou 003.01)
104-24-91 (KALA Arou 001.01)
104-24-91 (KALA Arou 001.13)
104-24-91 (KALA Arou 001.18)
104-24-91[(KALA Arou 004.01) — *HoChyMin*: 104-24-91[
104-36 (KALA Arou 001.03)
104-72-08-67 (ENKO Abou 046) — *HoChyMin*: 104-72-13-67
104-72-23 (ENKO Mins 001)
104-72(-)••-•• (KALA Arou 005.01)
104-72-67 (CYPR Mvas 001) — *HoChyMin*: 104-72-67
104-72-87-99-23 (KALA Arou 001.01)
104-91 (KALA Arou 001.02)
104-97 (MAAP Avas 002; HALA Psce 001)
104-99-82 (ENKO Abou 001)
104-101/102 or 101/102-104 (MYRT Mvas 001, 002) — *HoChyMin*: 104-101
    04-104-37-53 (ENKO Abou 032)
    107-104-23 (KITI Iins 001.01)
    102-87-104-97 (ENKO Abou 069)
    ••-88-104-97 (ENKO Abou 060) — *HoChyMin*: ••-87-104-97
    ]97-104-04-••-••-••[(ENKO Aost 002)
        ] ••-05-68-104[(ENKO Aost 002)

107

107 (KITI Avas 008, 014, 018)
64/107 (ENKO Abou 067) — *HoChyMin*: 61
107-11-24-107-27-69-23 (ENKO Arou 001.12-13)
107-19 (KITI Avas 019) — *HoChyMin*: 107-19
107-27 (ENKO Abou 012)
107-39-••[(ENKO Abou 076)
107-91 (KALA Arou 001.02)
107-97 (ENKO Avas 002)
107-104-23 (KITI Iins 001.01)
107-110-23 (ENKO Abou 050)
107-••-•• (ENKO Abou 010) — *HoChyMin*: 107-••-••-••-82-61-06-99
    38-107-09-41 (ENKO Abou 006)
    53-107-99 (ENKO Abou 004)
    102-87-107-97 (ENKO Abou 052)
    102-87-107-97 (HALA Abou 001) — *HoChyMin*: 102-87-107-97-82-08
    110-97-107-09-27 (ENKO Abou 043) — *HoChyMin*: 110-68-107-09-27
    107-11-24-107-27-69-23 (ENKO Arou 001.12-13)

108

108-99-23 (CYPR? Psce 005) — *HoChyMin*: 108-99-23

109

109 (KITI Avas 006, 010)
]109-17-•• (TOUM Avas 001*c*.02)
82-109-64-23 (ENKO Mvas 001)
102-109-04-13-23 (CYPR Mvas 002)
102-109-04-13-23 (ENKO Mvas 002) — *HoChyMin*: 102-109-04-08-23
81-110-109-50-72 (KITI Ipla 001.*r*) — *HoChyMin*: 81-110-109-64-72

110

110 (ENKO Abou 078, 081; ENKO Arou 001.08; ENKO Avas 004, 013;)
110-23-59 (ENKO Abou 062)
110-23-59(-21-)23 (KITI Iins 001) — *HoChyMin*: 110-23-59-21-23
110-34-73-50 (ENKO Abou 047)
110-39-97 (ENKO Abou 018)
110-46-97 (ENKO Abou 034) — *HoChyMin*: 110-46-97
110-61 (KOUR Avas 004)
110-63 (KOUR Avas 001)
110-63 (KOUR Avas 002)
110-73-85 (ENKO Abou 037)
110-82-33-70 (KALA Arou 001.15)
110-96-34 (ENKO Abou 025)
110-97-107-09-27 (ENKO Abou 043) — *HoChyMin*: 110-68-107-09-27
110-102-53-04 (ENKO Arou 001.03-04)
]110-46-110[(KALA Ppla 002) — *HoChyMin*:]110-46-110[
81-110-109-50-72 (KITI Ipla 001.*r*) — *HoChyMin*: 81-110-109-64-72
96-110-33-55 o 55-33-110-96 (KALA Mbij 001, 002) — *HoChyMin*: 96-110-33-55
107-110-23 (ENKO Abou 050)
06-73-110-27-05 (ENKO Abou 018)
12-24-110-97 (ENKO Abou 078)
27-08-110-97-23 (ENKO Arou 001.04-05; KOUR Psce 001)
102-97-110-67 (ENKO Abou 049) — *HoChyMin*: 102-68-110-67
102-73-04-97-110-73 (ENKO Abou 021)
]110-46-110[(KALA Ppla 002) — *HoChyMin*:]110-46-110[
30-110, or 110-30 (CYPR? Psce 002) — *HoChyMin*: 30-110
41-110, or 110-41 (SALA Psce 001) — *HoChyMin*: ••-110
102-87-28-110 (MYRT Avas 001)
44-61-97-19-110 (ENKO Abou 044)

112

112 (ENKO Abou 042, 043, 066, 079; KALA Arou 001.10; KITI Avas 013; ENKO Mvas 002)
112-••-•• (ENKO Abou 079)
01-85-88-112 (ENKO Abou 039)

114

114 (ENKO? Mins 002)
70-114-23 (KALA Avas 002) — *HoChyMin*: 70-82-23
102-36-23-114-23 (ENKO Mlin 002.02)

CM 2

01

01-28-107-89 (ENKO Atab 002.A.I.32)
    79-01-59 (ENKO Atab 002.A.I.39)
        79-01 (ENKO Atab 002.A.I.26)
        79-76-01 (ENKO Atab 002.B.I.09)
        ]••-01 (ENKO Atab 002.A.I.38)

04

04-08 (ENKO Atab 002.B.II.01) — *HoChyMin*: 04-13
04-25 (ENKO Atab 003.A.08)
04-25-51-08 (ENKO Atab 003.A.05) — *HoChyMin*: 04-25-51-13
04-25-74-54 (ENKO Atab 003.A.12)
04-25-74-95 (ENKO Atab 003.A.14)
04-49-24 (ENKO Atab 002.A.I.26)
04-75 (ENKO Atab 002.A.II.35; 003.B.16, B.22)
04-75-29 (ENKO Atab 003.B.17)
04-75-35 (ENKO Atab 004.B.18)
04-75-35 (ENKO Atab 004.B.20)
04-76-54-65 (ENKO Atab 004.B.21) — *HoChyMin*: 04-76-54-64
04-82 (ENKO Atab 004.A.*lat.sup*)
04-96 (ENKO Atab 003.A.19)
04-••[••] (ENKO Atab 004.A.I.2.01)
04-••[(ENKO Atab 002.B.I.25)
04[(ENKO Atab 004.B.13)
    21-04-78 (ENKO Atab 002.B.I.16)
    25-04-09 (ENKO Atab 002.B.I.10)
    25-04-75 (ENKO Atab 003.B.16)
    102-04-75 (ENKO Atab 003.A.07)
    102-04-87[(ENKO Atab 004.B.21)
    30-06-04-75 (ENKO Atab 003.A.15)
    78-25-04-75 (ENKO Atab 002.B.I.10)
    102-75-04-54 (ENKO Atab 002.A.I.30)
    ]••-04-35-69 (ENKO Atab 002.A.I.42)
    ]••-••-04-75 (ENKO Atab 002.A.I.37)
        102-04 (ENKO Atab 002.A.I.33)
        110-04 (ENKO Atab 003.B.20)
        25-06-04 (ENKO Atab 004.B.18)
        25-06-04 (ENKO Atab 004.B.20)
        102-75-04 (ENKO Atab 003.A.11; A.14)

05

05-107-95 (ENKO Atab 002.B.I.21)
05-110-27 (ENKO Atab 002.B.I.08)
- 21-05-75 (ENKO Atab 002.A.I.31)
- 59-05-82 (ENKO Atab 002.A.I.27) — *HoChyMin*: ••-05-82
- 62-05-60-54[(ENKO Atab 003.A.10) — *HoChyMin*: 62-05-60-54[
- 78-05-70 (ENKO Atab 002.A.II.41)
- 79-05-61-95 (ENKO Atab 002.A.I.43)
- 82-05-24-••[(ENKO Atab 004.B.14)
- 30-21-05-75-65 (ENKO Atab 003.A.04) — *HoChyMin*: 30-21-05-75-64
- 70-27-05-61-95 (ENKO Atab 003.A.17)
- 110-35-05-17 (ENKO Atab 003.A.18)
- ••-54-05-60-90 (ENKO Atab 004.B.10)
-]17-95-05-27-107 (ENKO Atab 004.B.19)
-]••-107-78-05-70 (ENKO Atab 002.A.I.34)
  - 30-52-05 (ENKO Atab 003.A.15)
  - 104-56-05 (ENKO Atab 003.A.18)
  - 79-30-30-05 (ENKO Atab 002.A.I.31) — *HoChyMin*: 79-30-30-05
  - 102-82-37-05 (ENKO Atab 003.A.18)

06

06[(ENKO Atab 004.B.01)
06-06 (ENKO Atab 004.B.09)
06-06-10-51-••[(ENKO Atab 002.A.I.28)
06-06-29[(ENKO Atab 004.B.03) — *HoChyMin*: 06-06-78[
06-06-82 (ENKO Atab 004.B.02, B.03 and B.06)
06-]06-82 (ENKO Atab 004.B.01)
06-09-06-107 (ENKO Atab 004.B.02)
06-09-06-107 (ENKO Atab 004.B.03)
06-21 (ENKO Atab 003.B.24)
06-25 (ENKO Atab 002.B.I.15)
06-49-33-35-54 (ENKO Atab 003.A.04)
06-56 (ENKO Atab 003.B.24)
06-82-75 (ENKO Atab 002.B.I.24)
- 06-06 (ENKO Atab 004.B.09)
- 06-06-10-51-••[(ENKO Atab 002.A.I.28)
- 06-06-29[(ENKO Atab 004.B.03) — *HoChyMin*: 06-06-78[
- 06-06-82 (ENKO Atab 004.B.02, B.03 and B.06)
- 25-06-04 (ENKO Atab 004.B.18)
- 25-06-04 (ENKO Atab 004.B.20)
- 25-06-08 (ENKO Atab 002.A.I.27) — *HoChyMin*: 25-06-13
- 25-06-65 (ENKO Atab 003.A.16) — *HoChyMin*: 25-06-64
- 25-06-82 (ENKO Atab 002.B.I.13)
- 30-06-04-75 (ENKO Atab 003.A.15)
- 104-06-89[(ENKO Atab 002.B.II.09)
- 107-06-06-90-08 (ENKO Atab 004.B.13) — *HoChyMin*: 107-06-06-90-13
- 110-06[(ENKO Atab 003.B.25)

06-09-06-107 (ENKO Atab 004.B.02)
06-09-06-107 (ENKO Atab 004.B.03)
79-61-06-08 (ENKO Atab 002.A.I.29) — *HoChyMin*: 79-61-06-13
107-06-06-90-08 (ENKO Atab 004.B.13) — *HoChyMin*: 107-06-06-90-13
]••-06-90 (ENKO Atab 002.A.I.35)

08

27-08-21 (ENKO Atab 002.A.I.32) — *HoChyMin*: 27-13-21
102-08-08 (ENKO Atab 004.B.11) — *HoChyMin*: 102-13-13
79-17-08[(ENKO Atab 002.B.I.17) — *HoChyMin*: 79-17-13[
]••-82-08-76(-)●[(ENKO Atab 002.B.I.20) — *HoChyMin*:]••-82-13-76-●[
04-08 (ENKO Atab 002.B.II.01) — *HoChyMin*: 04-13
21-08 (ENKO Atab 003.B.15) — *HoChyMin*: 21-13
79-08 (ENKO Atab 003.A.21) — *HoChyMin*: 79-13
96-08 (ENKO Atab 003.B.15) — *HoChyMin*: 96-13
102-08 (ENKO Atab 002.B.I.09, B.14) — *HoChyMin*: 102-13
25-06-08 (ENKO Atab 002.A.I.27) — *HoChyMin*: 25-06-13
25-21-08 (ENKO Atab 004.A.*lat.sup*.) — *HoChyMin*: 25-21-13
38-87-08 (ENKO Atab 002.B.I.23) — *HoChyMin*: 38-87-13
102-08-08 (ENKO Atab 004.B.11) — *HoChyMin*: 102-13-13
102-25-08 (ENKO Atab 002.B.I.02) — *HoChyMin*: 102-25-13
102-82-08 (ENKO Atab 003.B.17) — *HoChyMin*: 102-82-13
104-56-08 (ENKO Atab 003.B.22) — *HoChyMin*: 104-56-13
110-82-08 (ENKO Atab 002.A.I.40) — *HoChyMin*: 110-82-13
110-78-08 (ENKO Atab 003.A.11) — *HoChyMin*: 110-78-13
04-25-51-08 (ENKO Atab 003.A.05) — *HoChyMin*: 04-25-51-13
38-33-51-08 (ENKO Atab 003.A.19) — *HoChyMin*: 38-33-51-13
52-30-21-08 (ENKO Atab 003.B.18) — *HoChyMin*: 52-30-21-13
52-30-62-08 (ENKO Atab 003.A.08) — *HoChyMin*: 52-30-62-13
62-10-51-08 (ENKO Atab 003.A.07) — *HoChyMin*: 62-10-51-13
79-61-06-08 (ENKO Atab 002.A.I.29) — *HoChyMin*: 79-61-06-13
102-76-29-08 (ENKO Atab 004.B.17) — *HoChyMin*: 102-76-29-13
102/110-51-08 (ENKO Atab 002.A.I.29) — *HoChyMin*: 110-51-13
107-17-75-08 (ENKO Atab 003.A.19) — *HoChyMin*: 107-17-75-13
107-06-06-90-08 (ENKO Atab 004.B.13) — *HoChyMin*: 107-06-06-90-13

09

09-80-47 (ENKO Atab 002.B.I.11)
09-87-61 (ENKO Atab 004.A.I.7.01)
09-97 (ENKO Atab 004.A.II.3.02)
09-107 (ENKO Atab 002.B.I.05)
06-09-06-107 (ENKO Atab 004.B.02)
06-09-06-107 (ENKO Atab 004.B.03)
17-09-60-59-75 (ENKO Atab 002.A.I.30) — *HoChyMin*: 17-09-60-59-75
21-09-09 (ENKO Atab 002.A.I.34) — *HoChyMin*: 21-68-09

21-09-69-23 (ENKO Atab 003.B.19)
23-09-10[(ENKO Atab 004.A.I.4.01) — *HoChyMin*: 23-09-27[
23-09-60-59-••[(ENKO Atab 003.B.12)
25-09-49-28-95 (ENKO Atab 003.A.03, A.10)
27-09-90 (ENKO Atab 002.B.I.24)
56-09 (ENKO Atab 003.A.12)
⌊62-09-47[(ENKO Atab 002.A.II.40) — *HoChyMin*: ⌊62-09-47[
68-09-69-59[(ENKO Atab 004.A.II.5.01)
79-09-11-75 (ENKO Atab 002.A.I.27)
79-09-44-70 (ENKO Atab 002.B.I.14)
79-09-54-107 (ENKO Atab 004.B.06)
82-09-107-17 (ENKO Atab 003.A.21)
102-09-54-72-17 (ENKO Atab 003.B.16)
104-09-76-104-70-27-21 (ENKO Atab 002.B.I.26)
104-09-90 (ENKO Atab 004.B.09)
[••]-09-27-69 (ENKO Atab 003.A.07)
87-51-09-82 (ENKO Atab 003.A.12)
104-92-09-60-59 (ENKO Atab 004.B.04, B.05)
25-27-69-09-69 (ENKO Atab 003.A.13)
47-30-107-09-69 (ENKO Atab 002.A.I.39) — *HoChyMin*: 47-30-107-09-69
47-30-107-09-69 (ENKO Atab 002.B.I.06)
79-70-10-75-09-107 (ENKO Atab 002.B.I.10)
(-)110-••-59/09-••[(ENKO Atab 002.A.II.39) — *HoChyMin*: 27-08-110-••-••-72[
] ⌊23-09⌋ [(ENKO Atab 002.A.I.24)
27-09 (ENKO Atab 002.B.I.26)
24-09 (ENKO Atab 003.B.21)
21-09-09 (ENKO Atab 002.A.I.34) — *HoChyMin*: 21-68-09
25-04-09 (ENKO Atab 002.B.I.10)
38-107-09 (ENKO Atab 002.A.I.42) — *HoChyMin*: 38-110-09
44-61-09 (ENKO Atab 004.B.22)
68-62-09 (ENKO Atab 003.A.16)
79-05-61-09 (ENKO Atab 002.A.I.43)
104-37-28-09 (ENKO Atab 003.B.15) — *HoChyMin*: 104-37-82-09
44-75-09[(ENKO Atab 002.A.II.33)

10

10-97-17 (ENKO Atab 002.A.I.31)
27-10[-•• (ENKO Atab 004.A.I.2.01) — *HoChyMin*: 27-27[••
62-10-51-08 (ENKO Atab 003.A.07) — *HoChyMin*: 62-10-51-13
81-10-17[(ENKO Atab 002.B.II.03) — *HoChyMin*: 81-10-12[
06-06-10-51-••[(ENKO Atab 002.A.I.28)
79-70-10-75-09-107 (ENKO Atab 002.B.I.10)
23-09-10[(ENKO Atab 004.A.I.4.01) — *HoChyMin*: 23-09-27[

11

11-21 (ENKO Atab 003.B.17)
    ]104-11-24 (ENKO Atab 002.B.I.01)
    107-11-87 (ENKO Atab 002.A.I.29; 002.B.I.10; 003.B.18) — *HoChyMin*: 107-11-87 (ENKO Atab 002.A.I.29)
    79-09-11-75 (ENKO Atab 002.A.I.27)

12

12-61-62 (ENKO Atab 003.B.23)
12-92-38[(ENKO Atab 004.A.I.5.01)
12-97 (ENKO Atab 002.A.I.27)
12-107-27 (ENKO Atab 002.B.I.07)
12-••[(ENKO Atab 002.A.II.37)
    30-12-17 (ENKO Atab 003.B.20)
    38-12-97 (ENKO Atab 003.B.23, 004.B.14)
    38-12-97-17 (ENKO Atab 002.B.I.13)
    104-12-33-25 (ENKO Atab 002.B.I.26) — *HoChyMin*: 107-12-33-25

17

17-09-60-59-75 (ENKO Atab 002.A.I.30) — *HoChyMin*: 17-09-60-59-75
17[(ENKO Atab 003.A.05)
]17-95-05-27-107 (ENKO Atab 004.B.19)
    30-17-17 (ENKO Atab 002.B.I.07)
    38-17-17 (ENKO Atab 002.B.I.03)
    38-17-59 (ENKO Atab 004.B.15)
    38-17-62 (ENKO Atab 004.B.16)
    47-17-97-17 (ENKO Atab 003.A.13)
    62-17-51-61-95 (ENKO Atab 002.A.I.37) — *HoChyMin*: 62-17-51-61-95
    79-17-08[(ENKO Atab 002.B.I.17) — *HoChyMin*: 79-17-13[
    107-17-75-08 (ENKO Atab 003.A.19) — *HoChyMin*: 107-17-75-13
    30-70-17-23 (ENKO Atab 004.B.08)
    81-10-17[(ENKO Atab 002.B.II.03) — *HoChyMin*: 81-10-12[
    102-29-17-17 (ENKO Atab 003.A.02)
    76-75-75-••-17[(ENKO Atab 003.B.13) — *HoChyMin*: ••-••-••-••-17[
    110-37-21-17-23 (ENKO Atab 002.B.I.25)
        38-17 (ENKO Atab 004.B.14)
        10-97-17 (ENKO Atab 002.A.I.31)
        21-69-17 (ENKO Atab 002.B.I.05)
        23-62-17 (ENKO Atab 003.A.12)
        27-69-17 (ENKO Atab 003.A.17)
        28-21-17 (ENKO Atab 003.A.10)
        30-12-17 (ENKO Atab 003.B.20)
        30-17-17 (ENKO Atab 002.B.I.07)
        38-17-17 (ENKO Atab 002.B.I.03)

110-29-17 (ENKO Atab 002.A.I.37)
21-60-89-17 (ENKO Atab 003.B.21)
21-78-97-17 (ENKO Atab 002.A.I.41)
38-12-97-17 (ENKO Atab 002.B.I.13)
47-17-97-17 (ENKO Atab 003.A.13)
[¦] 59-75-97-17 (ENKO Atab 002.A.I.30)
68-25-97-17 (ENKO Atab 003.A.15)
82-09-107-17 (ENKO Atab 003.A.21)
102-29-17-17 (ENKO Atab 003.A.02)
110-35-05-17 (ENKO Atab 003.A.18)
102-09-54-72-17 (ENKO Atab 003.B.16)
••-29-97-51-17 (ENKO Atab 002.A.I.34)

21

21-04-78 (ENKO Atab 002.B.I.16)
21-05-75 (ENKO Atab 002.A.I.31)
21-08 (ENKO Atab 003.B.15) — *HoChyMin*: 21-13
21-09-09 (ENKO Atab 002.A.I.34) — *HoChyMin*: 21-68-09
21-09-69-23 (ENKO Atab 003.B.19)
21-23-••[(ENKO Atab 002.A.I.27)
21-35 (ENKO Atab 003.A.06)
21-47-70 (ENKO Atab 002.B.I.15, 003.B.19)
21-60-89-17 (ENKO Atab 003.B.21)
21-69-17 (ENKO Atab 002.B.I.05)
21-72-96 (ENKO Atab 003.A.21)
21-78-51 (ENKO Atab 004.B.22)
21-78-97-17 (ENKO Atab 002.A.I.41)
21-96-69-65 (ENKO Atab 003.A.09) — *HoChyMin*: 21-96-69-64
    25-21-08 (ENKO Atab 004.A.*lat*.*sup*.) — *HoChyMin*: 25-21-13
    28-21-17 (ENKO Atab 003.A.10)
    30-21-05-75-65 (ENKO Atab 003.A.04) — *HoChyMin*: 30-21-05-75-64
    30-21-96-••[(ENKO Atab 003.A.06)
    62-21-24-54[(ENKO Atab 004.B.12) — *HoChyMin*: 62-21-24-54[
    80-21-78 (ENKO Atab 002.A.I.35) — *HoChyMin*: 80-21-78
    23-60-21-••[(ENKO Atab 003.B.19)
    52-30-21-08 (ENKO Atab 003.B.18) — *HoChyMin*: 52-30-21-13
    102-61-21-••[(ENKO Atab 004.B.11)
    110-37-21-17-23 (ENKO Atab 002.B.I.25)
        06-21 (ENKO Atab 003.B.24)
        11-21 (ENKO Atab 003.B.17)
        27-08-21 (ENKO Atab 002.A.I.32) — *HoChyMin*: 27-13-21
        52-30-21 (ENKO Atab 003.A.01)
        110-74-21 (ENKO Atab 003.A.14)
        ••-47-21 (ENKO Atab 003.B.14) — *HoChyMin*: ••-47-21
        104-09-76-104-70-27-21 (ENKO Atab 002.B.I.26)

23

] ¦ 23-09 ¦[(ENKO Atab 002.A.I.24)
23-09-10[(ENKO Atab 004.A.I.4.01) — *HoChyMin*: 23-09-27[
23-09-60-59-••[(ENKO Atab 003.B.12)
23-30-110-95 (ENKO Atab 002.A.I.33)
23-37[(ENKO Atab 002.B.I.21)
23-37-27[(ENKO Atab 003.A.09)
23-51-66/65 (ENKO Atab 002.A.I.33) — *HoChyMin*: 23-51-66
23-60-21-••[(ENKO Atab 003.B.19)
23-62-17 (ENKO Atab 003.A.12)
23-65-27-80 (ENKO Atab 002.B.I.01) — *HoChyMin*: 23-64-27-80
23-69-27 (ENKO Atab 002.B.I.23) — *HoChyMin*: 23-69-27
23-90-33-27[(ENKO Atab 003.B.16)
    21-23-••[(ENKO Atab 002.A.I.27)
    56-23-90-75 (ENKO Atab 002.A.I.40)
    82-23-•• (ENKO Atab 004.A.I.7.02)
    ]••-29-23-92-97 (ENKO Atab 002.B.I.02)
    ••-90-23-80-•• (ENKO Atab 003.A.21)
        82-23 (ENKO Atab 004.B.11)
        87-23 (ENKO Atab 003.B.15)
        104-23 (ENKO Atab 003.A.06)
        110-78-23 (ENKO Atab 004.B.09)
        21-09-69-23 (ENKO Atab 003.B.19)
        30-70-17-23 (ENKO Atab 004.B.08)
        110-37-21-17-23 (ENKO Atab 002.B.I.25)
        ••-75-62-60-23 (ENKO Atab 002.A.I.26)

24

24[(ENKO Atab 002.A.II.4)
24-09 (ENKO Atab 003.B.21)
24-37-27 (ENKO Atab 002.A.I.38)
24-70 (ENKO Atab 003.A.01)
    38-24-••-••[(ENKO Atab 002.A.I.26)
    38-24-80 (ENKO Atab 003.A.17)
    82-24-69 (ENKO Atab 004.B.05)
    62-21-24-54[(ENKO Atab 004.B.12) — *HoChyMin*: 62-21-24-54[
    82-05-24-••[(ENKO Atab 004.B.14)
        89-24 (ENKO Atab 004.B.08)
        104-24 (ENKO Atab 004.B.02, B.03, B.06) — *HoChyMin*: 38-24 (ENKO Atab 004.B.06)
        04-49-24 (ENKO Atab 002.A.I.26)
        102-65-24 (ENKO Atab 004.B.04) — *HoChyMin*: 102-64-24
        ]104-11-24 (ENKO Atab 002.B.I.01)
        ••-59-61-24 ¦[(ENKO Atab 004.A.II.4.01)

25

25-04-09 (ENKO Atab 002.B.I.10)
25-04-75 (ENKO Atab 003.B.16)
25-06-04 (ENKO Atab 004.B.18)
25-06-04 (ENKO Atab 004.B.20)
25-06-08 (ENKO Atab 002.A.I.27) — *HoChyMin*: 25-06-13
25-06-65 (ENKO Atab 003.A.16) — *HoChyMin*: 25-06-64
25-06-82 (ENKO Atab 002.B.I.13)
25-09-49-28-95 (ENKO Atab 003.A.03, A.10)
25-21-08 (ENKO Atab 004.A.*lat*.*sup*.) — *HoChyMin*: 25-21-13
25-25 (ENKO Atab 004.B.08)
25-27-69-09-69 (ENKO Atab 003.A.13)
25-27-90 (ENKO Atab 002.A.I.36)
25-54-30-70[(ENKO Atab 002.B.I.11)
25-54-47-60-59 (ENKO Atab 004.B.22) — *HoChyMin*: 25-54-47-60-59
25-56-••-••-••[(ENKO Atab 002.A.I.25)
25-87-59-89 (ENKO Atab 003.A.13)
25-90 (ENKO Ataba 003.A.20)
25-95 (ENKO Atab 002.A.II.34)
    04-25-51-08 (ENKO Atab 003.A.05) — *HoChyMin*: 04-25-51-13
    04-25-74-54 (ENKO Atab 003.A.12)
    04-25-74-95 (ENKO Atab 003.A.14)
    38-25[••-••]29-65 (ENKO Atab 004.A.I.5.01) — *HoChyMin*: 38-25[••-••]29-64 | 68-25[(ENKO Atab 004.B.18)
    68-25-33-25 (ENKO Atab 004.B.17)
    68-25-75 (ENKO Atab 004.B.11)
    68-25-96 (ENKO Atab 004.A.*lat*.*sup*.)
    68-25-97 (ENKO Atab 004.B.10)
    68-25-97-17 (ENKO Atab 003.A.15)
    78-25-04-75 (ENKO Atab 002.B.I.10)
    82-25-75-59 (ENKO Atab 004.B.12, B.14)
    102-25-08 (ENKO Atab 002.B.I.02) — *HoChyMin*: 102-25-13
    102-25-75 (ENKO Atab 002.B.I.22) — *HoChyMin*: 102-25-75
    102-25-75 (ENKO Atab 003.A.15)
    102-25-75-96 (ENKO Atab 004.B.08)
        04-25 (ENKO Atab 003.A.08)
        06-25 (ENKO Atab 002.B.I.15)
        25-25 (ENKO Atab 004.B.08)
        ]••-••-25 (ENKO Atab 002.A.I.39)
        68-25-33-25 (ENKO Atab 004.B.17)
        104-12-33-25 (ENKO Atab 002.B.I.26) — *HoChyMin*: 107-12-33-25

27

27 | 110-••-59/09-••[(ENKO Atab 002.A.II.39) — *HoChyMin*: 27-08-110-••-••-72[
27-08-21 (ENKO Atab 002.A.I.32) — *HoChyMin*: 27-13-21
27-09 (ENKO Atab 002.B.I.26)

27-09-90 (ENKO Atab 002.B.I.24)
27-27 (ENKO Atab 002.B.I.12, B.I.24)
] ⌊ 27-10[-•• (ENKO Atab 004.A.I.2.01) — *HoChyMin*:] ⌊ 27-27[••
27-30-52 (ENKO Atab 003.B.20)
27-51 (ENKO Atab 003.A.19, 004.A.*lat.sup*.)
27-51-••[(ENKO Atab 002.A.II.38)
27-69-17 (ENKO Atab 003.A.17)
27-87-27 (ENKO Atab 002.B.I.08)
27-•• (ENKO Atab 004.A.I.1.01)
    25-27-90 (ENKO Atab 002.A.I.36)
    25-27-69-09-69 (ENKO Atab 003.A.13)
    47-27-69[(ENKO Atab 003.B.17)
    70-27-05-61-95 (ENKO Atab 003.A.17)
    102-27-82 (ENKO Atab 002.A.II.42)
    23-65-27-80 (ENKO Atab 002.B.I.01) — *HoChyMin*: 23-64-27-80
    47-96-27-69 (ENKO Atab 003.A.11)
    54-65-27-89 (ENKO Atab 002.A.I.41) — *HoChyMin*: 54-64-27-89
    102-75-27-69 (ENKO Atab 002.B.I.02)
    [••]-09-27-69 (ENKO Atab 003.A.07)
    23-37-27[(ENKO Atab 003.A.09)
    ••-••-••-27-89 (ENKO Atab 002.B.I.08)
    23-90-33-27[(ENKO Atab 003.B.16)
    ]17-95-05-27-107 (ENKO Atab 004.B.19)
    104-09-76-104-70-27-21 (ENKO Atab 002.B.I.26)
        ]••-27 (ENKO Atab 003.B.13) — *HoChyMin*:]••-27
        27-27 (ENKO Atab 002.B.I.12, B.I.24)
        38-27 (ENKO Atab 003.B.23)
        79-27 (ENKO Atab 002.B.I.12)
        05-110-27 (ENKO Atab 002.B.I.08)
        12-107-27 (ENKO Atab 002.B.I.07)
        23-69-27 (ENKO Atab 002.B.I.23) — *HoChyMin*: 23-69-27
        24-37-27 (ENKO Atab 002.A.I.38)
        27-87-27 (ENKO Atab 002.B.I.08)
        102-35-27 (ENKO Atab 002.B.I.12)
        38-87-87-27 (ENKO Atab 002.B.I.23)
        102-56-33-27 (ENKO Atab 003.B.17)
        102-60-27 (ENKO Atab 004.B.16)
        107-33-70-27 (ENKO Atab 002.B.I.03) — *HoChyMin*: 107-33-72-27

28

28-21-17 (ENKO Atab 003.A.10)
28-110[(ENKO Atab 004.B.05)
    01-28-107-89 (ENKO Atab 002.A.I.32)
    79-28-51 (ENKO Atab 002.B.I.11)
    102-28-54 (ENKO Atab 003.A.05)
    68-82-28-95 (ENKO Atab 004.A.I.6.01)
    68-82-28-95 (ENKO Atab 004.A.I.5.02, A.I.5.03) — *HoChyMin*: 68-82-28-95
        (ENKO Atab 004.A.I.5.02)

68-82-28-95 (ENKO Atab 004.A.I.2.02)
68-82[-28-95 (ENKO Atab 004.A.II.2.02)
87-68-28-107-36 (ENKO Atab 002.B.I.12)
104-37-28-09 (ENKO Atab 003.B.15) — *HoChyMin*: 104-37-82-09
25-09-49-28-95 (ENKO Atab 003.A.03, A.10)

29

82-29-97 (ENKO Atab 002.B.I.07, B.I.15)
102-29-17-17 (ENKO Atab 003.A.02)
110-29-17 (ENKO Atab 002.A.I.37)
••-29-97-51-17 (ENKO Atab 002.A.I.34)
]••-29-23-92-97 (ENKO Atab 002.B.I.02)
102-76-29-08 (ENKO Atab 004.B.17) — *HoChyMin*: 102-76-29-13
38-25[••-••]29-65 (ENKO Atab 004.A.I.5.01) — *HoChyMin*: 38-25[-••-••]29-64
⌊
04-75-29 (ENKO Atab 003.B.17)
06-06-29[(ENKO Atab 004.B.03) — *HoChyMin*: 06-06-78[
]••-••-75-29 (ENKO Atab 002.A.I.40)

30

30[(ENKO Atab 002.B.I.12)
30-06-04-75 (ENKO Atab 003.A.15)
30-12-17 (ENKO Atab 003.B.20)
30-17-17 (ENKO Atab 002.B.I.07)
30-21-05-75-65 (ENKO Atab 003.A.04) — *HoChyMin*: 30-21-05-75-64
30-21-96-••[(ENKO Atab 003.A.06)
30-44-33-70 (ENKO Atab 004.A.I.1.03) — *HoChyMin*: 30-44-33-70
30-44-33-70 (ENKO Atab 004.A.I.4.02) — *HoChyMin*: 30-44-33-70
30-44-33-70 (ENKO Atab 004.A.I.2.03) — *HoChyMin*: 30-44-33-70 (ENKO Atab 004.A.I.2.03)
30-44-33-70[(ENKO Atab 004.A.II.4.03)
30-44-33-70 (ENKO Atab 004.A.I.5.02, 6.02, 7.02)
30-44-33-70 (ENKO Atab 004.A.II.1.04)
30-44-33[-70 (ENKO Atab 004.A.II.3.02) — *HoChyMin*: 30-44-33[-70
30[-44-]33-70 (ENKO Atab 004.A.II.2.03)
30-52-05 (ENKO Atab 003.A.15)
30-61-54-65-69 (ENKO Atab 002.A.I.36) — *HoChyMin*: 30-61-54-64-69
30-70-17-23 (ENKO Atab 004.B.08)
30-70-65 (ENKO Atab 004.B.19) — *HoChyMin*: 30-70-64
30-70-87 (ENKO Atab 002.A.I.32)
30-107-70-82 (ENKO Atab 004.A.II.3.01)
23-30-110-95 (ENKO Atab 002.A.I.33)
27-30-52 (ENKO Atab 003.B.20)
38-30-51[(ENKO Atab 002.A.I.29) — *HoChyMin*: 38-30-51[
47-30-107-09-69 (ENKO Atab 002.A.I.39) — *HoChyMin*: 47-30-107-09-69
47-30-107-09-69 (ENKO Atab 002.B.I.06)

52-30 (ENKO Atab 002.A.II.40)
52-30-21 (ENKO Atab 003.A.01)
52-30-21-08 (ENKO Atab 003.B.18) — *HoChyMin*: 52-30-21-13
52-30-62-08 (ENKO Atab 003.A.08) — *HoChyMin*: 52-30-62-13
62-30-96-62 (ENKO Atab 002.A.I.30)
79-30-30-05 (ENKO Atab 002.A.I.31) — *HoChyMin*: 79-30-30-05
107-30-95 (ENKO Atab 003.A.19)
••-30-110 (ENKO Atab 002.A.I.33)
]••-30-95 (ENKO Atab 004.A.I.8.01)
25-54-30-70[(ENKO Atab 002.B.I.11)
79-30-30-05 (ENKO Atab 002.A.I.31) — *HoChyMin*: 79-30-30-05

33

]33-78 (ENKO Atab 003.A.22)
]33-95[(ENKO Atab 004.A.I.1.02)
38-33-51 (ENKO Atab 003.A.05, A.08, A.11)
38-33-51-08 (ENKO Atab 003.A.19) — *HoChyMin*: 38-33-51-13
47-33-54 (ENKO Atab 003.A.14)
51-33-47-49-75 (ENKO Atab 002.B.I.04)
62-33-75 (ENKO Atab 002.B.I.27)
107-33-70-27 (ENKO Atab 002.B.I.03) — *HoChyMin*: 107-33-72-27
06-49-33-35-54 (ENKO Atab 003.A.04)
23-90-33-27[(ENKO Atab 003.B.16)
30-44-33-70 (ENKO Atab 004.A.I.1.03) — *HoChyMin*: 30-44-33-70
30-44-33-70 (ENKO Atab 004.A.I.4.02) — *HoChyMin*: 30-44-33-70
30-44-33-70 (ENKO Atab 004.A.I.2.03) — *HoChyMin*: 30-44-33-70 (ENKO Atab 004.A.I.2.03)
30-44-33-70[(ENKO Atab 004.A.II.4.03)
30-44-33-70 (ENKO Atab 004.A.I.5.02, 6.02, 7.02)
30-44-33-70 (ENKO Atab 004.A.II.1.04)
30-44-33[-70 (ENKO Atab 004.A.II.3.02) — *HoChyMin*: 30-44-33[-70
30[-44-]33-70 (ENKO Atab 004.A.II.2.03)
68-25-33-25 (ENKO Atab 004.B.17)
78-95-33-35 (ENKO Atab 004.B.15)
104-12-33-25 (ENKO Atab 002.B.I.26) — *HoChyMin*: 107-12-33-25
102-56-33-27 (ENKO Atab 003.B.17)
    38-33 (ENKO Atab 003.A.05)
    44-75-33 (ENKO Atab 003.A.20)
    54-76-33 (ENKO Atab 003.A.17)
    104-60-33 (ENKO Atab 003.A.01)

35

102-35-27 (ENKO Atab 002.B.I.12)
102-35-75-82 (ENKO Atab 002.B.I.01)
102-35-76 (ENKO Atab 003.B.19) — *HoChyMin*: 102-35-96
102-35-82[(ENKO Atab 003.A.22)

102-35-87-70 (ENKO Atab 002.B.I.25)
102-35-96 (ENKO Atab 003.A.17)
102-35-96 (ENKO Atab 002.B.I.16)
110-35-05-17 (ENKO Atab 003.A.18)
]••-04-35-69 (ENKO Atab 002.A.I.42)
06-49-33-35-54 (ENKO Atab 003.A.04)
21-35 (ENKO Atab 003.A.06)
96-35 (ENKO Atab 003.B.24)
04-75-35 (ENKO Atab 004.B.18)
04-75-35 (ENKO Atab 004.B.20)
102-76-35 (ENKO Atab 004.B.15)
38-61-44-35 (ENKO Atab 004.B.16)
78-95-33-35 (ENKO Atab 004.B.15)

36

79-36-••[(ENKO Atab 002.B.II.02)
37-69-36 (ENKO Atab 002.B.I.08)
87-68-28-107-36 (ENKO Atab 002.B.I.12)

37

37-65 (ENKO Atab 004.A.II.4.02) — *HoChyMin*: 37-64
37-65-51 (ENKO Atab 004.B.12) → 37-64-51
37-65-54-65-70 (ENKO Atab 002.A.I.32) — *HoChyMin*: 37-64-54-64-70
37-69-36 (ENKO Atab 002.B.I.08)
37-97 (ENKO Atab 002.B.I.11)
]37[(ENKO Atab 004.A.II.3.01)
23-37[(ENKO Atab 002. B.I.21)
23-37-27[(ENKO Atab 003.A.09)
24-37-27 (ENKO Atab 002.A.I.38)
79-37-82-97 (ENKO Atab 003.A.03)
79-37-107 (ENKO Atab 004.A.II.1.04, A.II.2.03, A.II.4.02)
79-37-107 (ENKO Atab 004.A.I.2.02)
79-37-107 (ENKO Atab 004.A.I.1.03) — *HoChyMin*: 79-37-107
79-37-107 (ENKO Atab 004.A.I.6.01, A.I.7.02, A.II.3.03)
79-37-107 (ENKO Atab 004.A.I.3.02)
79-37-107[(ENKO Atab 004.A.II.3.03)
79-37-107 (ENKO Atab 004.A.I.5.03)
104-37-28-09 (ENKO Atab 003.B.15) — *HoChyMin*: 104-37-82-09
110-37-21-17-23 (ENKO Atab 002.B.I.25)
102-82-37-05 (ENKO Atab 003.A.18)

38

38-12-97 (ENKO Atab 004.B.14)

38-12-97-17 (ENKO Atab 002.B.I.13)
38-17 (ENKO Atab 004.B.14)
38-17-17 (ENKO Atab 002.B.I.03)
38-17-59[(ENKO Atab 004.B.15)
38-17-62 (ENKO Atab 004.B.16)
38-24-80 (ENKO Atab 003.A.17)
38-24-••-••[(ENKO Atab 002.A.I.26)
38-25[••-••]29-65 (ENKO Atab 004.A.I.5.01) — *HoChyMin*: 38-25[-••-••]29-64 |
38-27 (ENKO Atab 003.B.23)
38-30-51[(ENKO Atab 002.A.I.29) — *HoChyMin*: 38-30-51[
38-33 (ENKO Atab 003.A.05)
38-33-51 (ENKO Atab 003.A.05, A.08, A.11)
38-33-51-08 (ENKO Atab 003.A.19) — *HoChyMin*: 38-33-51-13
38-61-44-35 (ENKO Atab 004.B.16)
38-65 (ENKO Atab 004.A.I.2.02, 4.02, 6.02, 7.02) — *HoChyMin*: 38-64
38-65 (ENKO Atab 004.A.I.3.02, 5.02) — *HoChyMin*: 38-64
38[-65 (ENKO Atab 004.A.II.2.03, 4.02) — *HoChyMin*: 38[-64
38-65[(ENKO Atab 004.A.II.1.04) — *HoChyMin*: 38-64[
38-68-96 (ENKO Atab 004.A.I.3.01)
38-76 (ENKO Atab 002.A.I.28; 003.A.16) — *HoChyMin*: 38-76 (only in ENKO Atab 003.A.16)
38-76-74 (ENKO Atab 002.A.I.29)
38-82 (ENKO Atab 002.A.II.38; 003.B.18)
38-82-61-95 (ENKO Atab 002.A.I.38)
38-87-08 (ENKO Atab 002.B.I.23) — *HoChyMin*: 38-87-13
38-87-87-27 (ENKO Atab 002.B.I.23)
38-87-87-47-95 (ENKO Atab 002.B.I.09)
38-96-••[(ENKO Atab 002.B.II.05)
38-97-96-••[(ENKO Atab 003.A.07)
38-107-09 (ENKO Atab 002.A.I.42) — *HoChyMin*: 38-110-09
102-38-95-51 (ENKO Atab 004.A.I.2.01)
12-92-38[(ENKO Atab 004.A.I.5.01)

44

44[(ENKO Atab 003.B.24) – correct
44-••[(ENKO Atab 002.A.II.32)
44-47-95-75 (ENKO Atab 004.B.18)
44-47-95-75 (ENKO Atab 004.B.20)
44-61-09 (ENKO Atab 004.B.22)
44-78[(ENKO Atab 004.B.22)
44-75-09[(ENKO Atab 002.A.II.33)
44-75-33 (ENKO Atab 003.A.20)
30-44-33-70 (ENKO Atab 004.A.I.1.03) — *HoChyMin*: 30-44-33-70
30-44-33-70 (ENKO Atab 004.A.I.4.02) — *HoChyMin*: 30-44-33-70
30-44-33-70 (ENKO Atab 004.A.I.2.03) — *HoChyMin*: 30-44-33-70 (ENKO Atab 004.A.I.2.03)
30-44-33-70[(ENKO Atab 004.A.II.4.03)
30-44-33-70 (ENKO Atab 004.A.I.5.02, 6.02, 7.02)

30-44-33-70 (ENKO Atab 004.A.II.1.04)
30-44-33[-70 (ENKO Atab 004.A.II.3.02) — *HoChyMin*: 30-44-33[-70
30[-44-]33-70 (ENKO Atab 004.A.II.2.03)
49-44[(ENKO Atab 004.B.18)
38-61-44-35 (ENKO Atab 004.B.16)
79-09-44-70 (ENKO Atab 002.B.I.14)
87-90-44-••[(ENKO Ataba 003.A.02)
]••-••-••-••-44-75 (ENKO Atab 002.B.I.04)
56-96-44 (ENKO Atab 003.A.18)

47

47[(ENKO Atab 002.A.II.35)
47-17-97-17 (ENKO Atab 003.A.13)
47-27-69[(ENKO Atab 003.B.17)
47-30-107-09-69 (ENKO Atab 002.A.I.39) — *HoChyMin*: 47-30-107-09-69
47-30-107-09-69 (ENKO Atab 002.B.I.06)
47-33-54 (ENKO Atab 003.A.14)
47-47-60-59 (ENKO Atab 004.B.07)
47-68-60 (ENKO Atab 002.B.I.09)
47-70 (ENKO Atab 004.B.13)
47-96-27-69 (ENKO Atab 003.A.11)
47-107-••[(ENKO Atab 002.B.II.07)
21-47-70 (ENKO Atab 002.B.I.15, 003.B.19)
44-47-95-75 (ENKO Atab 004.B.18)
44-47-95-75 (ENKO Atab 004.B.20)
47-47-60-59 (ENKO Atab 004.B.07)
74-47-••[(ENKO Atab 002.B.II.04)
82-47-51 (ENKO Atab 002.B.I.14)
82-47-70-•• (ENKO Atab 004.A.I.7.01)
••-47-21 (ENKO Atab 003.B.14) — *HoChyMin*: ••-47-21
25-54-47-60-59 (ENKO Atab 004.B.22) — *HoChyMin*: 25-54-47-60-59
51-33-47-49-75 (ENKO Atab 002.B.I.04)
38-87-87-47-95 (ENKO Atab 002.B.I.09)
]47-95-61-••[(ENKO Atab 004.A.II.1.02)
09-80-47 (ENKO Atab 002.B.I.11)
¦62-09-47[(ENKO Atab 002.A.II.40) — *HoChyMin*: ¦62-09-47[
56-47[(ENKO Atab 004.B.20)

49

49-44[(ENKO Atab 004.B.18)
04-49-24 (ENKO Atab 002.A.I.26)
06-49-33-35-54 (ENKO Atab 003.A.04)
102-49-80 (ENKO Atab 004.B.13)
25-09-49-28-95 (ENKO Atab 003.A.03, A.10)
79-56-49-54 (ENKO Atab 003.A.09)
51-33-47-49-75 (ENKO Atab 002.B.I.04)

51

51-33-47-49-75 (ENKO Atab 002.B.I.04)
- 23-51-66/65 (ENKO Atab 002.A.I.33) — *HoChyMin*: 23-51-66
- 27-51-••[(ENKO Atab 002.A.II.38)
- 87-51-09-82 (ENKO Atab 003.A.12)
- 102/110-51-08 (ENKO Atab 002.A.I.29) — *HoChyMin*: 110-51-13
- 110-51-••[(ENKO Atab 002.B.II.08)
- 04-25-51-08 (ENKO Atab 003.A.05) — *HoChyMin*: 04-25-51-13
- 38-33-51-08 (ENKO Atab 003.A.19) — *HoChyMin*: 38-33-51-13
- 62-10-51-08 (ENKO Atab 003.A.07) — *HoChyMin*: 62-10-51-13
- 62-17-51-61-95 (ENKO Atab 002.A.I.37) — *HoChyMin*: 62-17-51-61-95
- 06-06-10-51-••[(ENKO Atab 002.A.I.28)
- ••-29-97-51-17 (ENKO Atab 002.A.I.34)
  - 27-51 (ENKO Atab 003.A.19, 004.A.*lat.sup*.)
  - 102-51 (ENKO Atab 002.B.I.11)
  - 107-51 (ENKO Atab 002.A.II.36)
  - 21-78-51 (ENKO Atab 004.B.22)
  - 37-65-51 (ENKO Atab 004.B.12) → 37-64-51
  - 38-33-51 (ENKO Atab 003.A.05, A.08, A.11)
  - 79-28-51 (ENKO Atab 002.B.I.11)
  - 82-47-51 (ENKO Atab 002.B.I.14)
  - 104-69-51 (ENKO Atab 002.A.I.28)
  - 102-38-95-51 (ENKO Atab 004.A.I.2.01)
  - 38-30-51[(ENKO Atab 002.A.I.29) — *HoChyMin*: 38-30-51[

52

52-30 ¦ (ENKO Atab 002.A.II.40)
52-30-21 (ENKO Atab 003.A.01)
52-30-21-08 (ENKO Atab 003.B.18) — *HoChyMin*: 52-30-21-13
52-30-62-08 (ENKO Atab 003.A.08) — *HoChyMin*: 52-30-62-13
- 30-52-05 (ENKO Atab 003.A.15)
- 79-52-65-75 (ENKO Atab 003.A.06) — *HoChyMin*: 79-52-64-75
-]52-70 (ENKO Atab 002.B.I.22)
  - 27-30-52 (ENKO Atab 003.B.20)
  -]52 (ENKO Atab 002.B.I.21)

54

54-65-27-89 (ENKO Atab 002.A.I.41) — *HoChyMin*: 54-64-27-89
54-76-33 (ENKO Atab 003.A.17)
54[(ENKO Atab 004.B.21)
54-59[(ENKO Atab 004.B.06)
- 25-54-30-70[(ENKO Atab 002.B.I.11)

25-54-47-60-59 (ENKO Atab 004.B.22) — *HoChyMin*: 25-54-47-60-59
79-54-••[(ENKO Atab 003.B.15)
| 102-54-••[(ENKO Atab 003.B.11)
102-54-75-82 (ENKO Atab 003.B.25)
••-54-05-60-90 (ENKO Atab 004.B.10)
04-76-54-65 (ENKO Atab 004.B.21) — *HoChyMin*: 04-76-54-64
30-61-54-65-69 (ENKO Atab 002.A.I.36) — *HoChyMin*: 30-61-54-64-69
37-65-54-65-70 (ENKO Atab 002.A.I.32) — *HoChyMin*: 37-64-54-64-70
79-09-54-107 (ENKO Atab 004.B.06)
102-09-54-72-17 (ENKO Atab 003.B.16)
102-••-••-54-75 (ENKO Atab 003.B.14) — *HoChyMin*: 102-••-••-54-75
72-54 (ENKO Atab 003.A.11)
47-33-54 (ENKO Atab 003.A.14)
102-28-54 (ENKO Atab 003.A.05)
102-75-54 (ENKO Atab 003.A.02, A.12)
04-25-74-54 (ENKO Atab 003.A.12)
79-56-49-54 (ENKO Atab 003.A.09)
102-75-04-54 (ENKO Atab 002.A.I.30)
06-49-33-35-54 (ENKO Atab 003.A.04)
]54 (ENKO Atab 004.B.01)
62-05-60-54[(ENKO Atab 003.A.10) — *HoChyMin*: 62-05-60-54[

56

56-09 (ENKO Atab 003.A.12)
56-23-90-75 (ENKO Atab 002.A.I.40)
56-47[(ENKO Atab 004.B.20)
56-96-44 (ENKO Atab 003.A.18)
56-••[(ENKO Atab 003.A.01)
25-56-••-••-••[(ENKO Atab 002.A.I.25)
79-56-49-54 (ENKO Atab 003.A.09)
102-56-33-27 (ENKO Atab 003.B.17)
104-56-05 (ENKO Atab 003.A.18)
104-56-08 (ENKO Atab 003.B.22) — *HoChyMin*: 104-56-13
107-56-69 (ENKO Atab 003.B.14)
06-56 (ENKO Atab 003.B.24)
79-56 (ENKO Atab 003.A.13)
87-56 (ENKO Atab 003.A.13)

59

59-05-82 (ENKO Atab 002.A.I.27) — *HoChyMin*: ••-05-82
[|] 59-75-97-17 (ENKO Atab 002.A.I.30)
61-59[-••-••] (ENKO Atab 004.A.II.2.01)
(-)110-••-59/09-••[(ENKO Atab 002.A.II.39) — *HoChyMin*: 27-08-110-••-••-72[
••-59-61-24 |[(ENKO Atab 004.A.II.4.01)
25-87-59-89 (ENKO Atab 003.A.13)

75-87-59-59 (ENKO Atab 002.A.I.29)
17-09-60-59-75 (ENKO Atab 002.A.I.30) — *HoChyMin*: 17-09-60-59-75
102-87-59[(ENKO Atab 004.B.17)
23-09-60-59-••[(ENKO Atab 003.B.12)
38-17-59 (ENKO Atab 004.B.15)
79-01-59 (ENKO Atab 002.A.I.39)
47-47-60-59 (ENKO Atab 004.B.07)
75-87-59-59 (ENKO Atab 002.A.I.29)
82-25-75-59 (ENKO Atab 004.B.12, B.14)
25-54-47-60-59 (ENKO Atab 004.B.22) — *HoChyMin*: 25-54-47-60-59
104-92-09-60-59 (ENKO Atab 004.B.04, B.05)
68-09-69-59[(ENKO Atab 004.A.II.5.01)

60

21-60-89-17 (ENKO Atab 003.B.21)
23-60-21-••[(ENKO Atab 003.B.19)
102-60-27 (ENKO Atab 004.B.16)
104-60-33 (ENKO Atab 003.A.01)
17-09-60-59-75 (ENKO Atab 002.A.I.30) — *HoChyMin*: 17-09-60-59-75
23-09-60-59-••[(ENKO Atab 003.B.12)
47-47-60-59 (ENKO Atab 004.B.07)
62-05-60-54[(ENKO Atab 003.A.10) — *HoChyMin*: 62-05-60-54[
25-54-47-60-59 (ENKO Atab 004.B.22) — *HoChyMin*: 25-54-47-60-59
104-92-09-60-59 (ENKO Atab 004.B.04, B.05)
••-54-05-60-90 (ENKO Atab 004.B.10)
••-75-62-60-23 (ENKO Atab 002.A.I.26)
107-60 (ENKO Atab 003.B.18)
110-60 (ENKO Atab 003.A.10)
47-68-60 (ENKO Atab 002.B.I.09)

61

61-59[-••-••] (ENKO Atab 004.A.II.2.01)
12-61-62 (ENKO Atab 003.B.23)
30-61-54-65-69 (ENKO Atab 002.A.I.36) — *HoChyMin*: 30-61-54-64-69
38-61-44-35 (ENKO Atab 004.B.16)
44-61-09 (ENKO Atab 004.B.22)
79-61-06-08 (ENKO Atab 002.A.I.29) — *HoChyMin*: 79-61-06-13
102-61-21-••[(ENKO Atab 004.B.11)
38-82-61-95 (ENKO Atab 002.A.I.38)
79-05-61-95 (ENKO Atab 002.A.I.43)
••-59-61-24 |[(ENKO Atab 004.A.II.4.01)
62-17-51-61-95 (ENKO Atab 002.A.I.37) — *HoChyMin*: 62-17-51-61-95
70-27-05-61-95 (ENKO Atab 003.A.17)
]47-95-61-••[(ENKO Atab 004.A.II.1.02)
09-87-61 (ENKO Atab 004.A.I.7.01)

62

62-05-60-54[(ENKO Atab 003.A.10) — *HoChyMin*: 62-05-60-54[
| 62-09-47[(ENKO Atab 002.A.II.40) — *HoChyMin*: | 62-09-47[
62-10-51-08 (ENKO Atab 003.A.07) — *HoChyMin*: 62-10-51-13
62-17-51-61-95 (ENKO Atab 002.A.I.37) — *HoChyMin*: 62-17-51-61-95
62-21-24-54[(ENKO Atab 004.B.12) — *HoChyMin*: 62-21-24-54[
62-30-96-62 (ENKO Atab 002.A.I.30)
62-33-75 (ENKO Atab 002.B.I.27)
62-65 (ENKO Atab 003.A.16) — *HoChyMin*: 62-64
62-65 (ENKO Atab 004.A.I.6.01) — *HoChyMin*: 62-64
62-70 (ENKO Atab 002.B.I.05)
62-76 | (ENKO Atab 002.A.I.34)
62-76-••[(ENKO Atab 004.B.02)
62-87-69 (ENKO Atab 002.A.I.42) — *HoChyMin*: 62-91-69
62-96-69-82[(ENKO Atab 003.A.08)
    23-62-17 (ENKO Atab 003.A.12)
    68-62-09 (ENKO Atab 003.A.16)
    102-62-82 (ENKO Atab 003.A.16)
    110-62-82[(ENKO Atab 003.B.26)
    ••-75-62-60-23 (ENKO Atab 002.A.I.26)
    52-30-62-08 (ENKO Atab 003.A.08) — *HoChyMin*: 52-30-62-13
    ]62-82 (ENKO Atab 003.B.12)
        110-62 (ENKO Atab 002.A.I.28)
        12-61-62 (ENKO Atab 003.B.23)
        38-17-62 (ENKO Atab 004.B.16)
        102-96-62 (ENKO Atab 003.B.16)
        62-30-96-62 (ENKO Atab 002.A.I.30)

65

    23-65-27-80 (ENKO Atab 002.B.I.01) — *HoChyMin*: 23-64-27-80
    37-65-51 (ENKO Atab 004.B.12) → 37-64-51
    37-65-54-65-70 (ENKO Atab 002.A.I.32) — *HoChyMin*: 37-64-54-64-70
    54-65-27-89 (ENKO Atab 002.A.I.41) — *HoChyMin*: 54-64-27-89
    102-65-24 (ENKO Atab 004.B.04) — *HoChyMin*: 102-64-24
    79-52-65-75 (ENKO Atab 003.A.06) — *HoChyMin*: 79-52-64-75
    79-68-65-69 (ENKO Atab 002.B.I.07) — *HoChyMin*: 79-68-64-69
    79-74-65-75 (ENKO Atab 002.B.I.05) — *HoChyMin*: 79-74-64-75
    30-61-54-65-69 (ENKO Atab 002.A.I.36) — *HoChyMin*: 30-61-54-64-69
    37-65-54-65-70 (ENKO Atab 002.A.I.32) — *HoChyMin*: 37-64-54-64-70
    ]68-65-80 (ENKO Atab 002.A.I.25) — *HoChyMin*:]68-64-80
        37-65 (ENKO Atab 004.A.II.4.02) — *HoChyMin*: 37-64
        38-65 (ENKO Atab 004.A.I.2.02, 4.02, 6.02, 7.02) — *HoChyMin*: 38-64
        38-65 (ENKO Atab 004.A.I.3.02, 5.02) — *HoChyMin*: 38-64
        38-65[(ENKO Atab 004.A.II.1.04) — *HoChyMin*: 38-64[
        62-65 (ENKO Atab 003.A.16) — *HoChyMin*: 62-64
        62-65 (ENKO Atab 004.A.I.6.01) — *HoChyMin*: 62-64

23-51-66/65 (ENKO Atab 002.A.I.33) — *HoChyMin*: 23-51-66
25-06-65 (ENKO Atab 003.A.16) — *HoChyMin*: 25-06-64
30-70-65 (ENKO Atab 004.B.19) — *HoChyMin*: 30-70-64
69-70-65 (ENKO Atab 002.A.II.37) — *HoChyMin*: 69-70-64
04-76-54-65 (ENKO Atab 004.B.21) — *HoChyMin*: 04-76-54-64
21-96-69-65 (ENKO Atab 003.A.09) — *HoChyMin*: 21-96-69-64
30-21-05-75-65 (ENKO Atab 003.A.04) — *HoChyMin*: 30-21-05-75-64
38-25[••-••]29-65 (ENKO Atab 004.A.I.5.01) — *HoChyMin*: 38-25[••-••]29-64 |
••-••-]65 (ENKO Atab 004.A.II.2.02) — *HoChyMin*: ••-••-]64

66

23-51-66/65 (ENKO Atab 002.A.I.33) — *HoChyMin*: 23-51-66

68

68-09-69-59[(ENKO Atab 004.A.II.5.01)
68-25[(ENKO Atab 004.B.18)
68-25-33-25 (ENKO Atab 004.B.17)
68-25-75 (ENKO Atab 004.B.11)
68-25-96 (ENKO Atab 004.A.*lat.sup*.)
68-25-97 (ENKO Atab 004.B.10)
68-25-97-17 (ENKO Atab 003.A.15)
68-62-09 (ENKO Atab 003.A.16)
68-82-28-95 (ENKO Atab 004.A.I.6.01)
68-82-28-95 (ENKO Atab 004.A.I.5.02, A.I.5.03) — *HoChyMin*: 68-82-28-95 (ENKO Atab 004.A.I.5.02)
68-82-28-95 (ENKO Atab 004.A.I.2.02)
68-82[-28-95 (ENKO Atab 004.A.II.2.02)
38-68-96 (ENKO Atab 004.A.I.3.01)
47-68-60 (ENKO Atab 002.B.I.09)
70-68-70-78[(ENKO Atab 003.A.03)
79-68-65-69 (ENKO Atab 002.B.I.07) — *HoChyMin*: 79-68-64-69
87-68-28-107-36 (ENKO Atab 002.B.I.12)
102-68-95[(ENKO Atab 004.A.I.3.01)
]68-65-80 (ENKO Atab 002.A.I.25) — *HoChyMin*:]68-64-80

69

69-70-65 (ENKO Atab 002.A.II.37) — *HoChyMin*: 69-70-64
21-69-17 (ENKO Atab 002.B.I.05)
23-69-27 (ENKO Atab 002.B.I.23) — *HoChyMin*: 23-69-27
27-69-17 (ENKO Atab 003.A.17)
37-69-36 (ENKO Atab 002.B.I.08)
104-69-51 (ENKO Atab 002.A.I.28)

21-09-69-23 (ENKO Atab 003.B.19)
21-96-69-65 (ENKO Atab 003.A.09) — *HoChyMin*: 21-96-69-64
25-27-69-09-69 (ENKO Atab 003.A.13)
62-96-69-82[(ENKO Atab 003.A.08)
68-09-69-59[(ENKO Atab 004.A.II.5.01)
47-27-69[(ENKO Atab 003.B.17)
62-87-69 (ENKO Atab 002.A.I.42) — *HoChyMin*: 62-91-69
82-24-69 (ENKO Atab 004.B.05)
107-56-69 (ENKO Atab 003.B.14)
••-90-69 (ENKO Atab 002.B.I.27)
47-96-27-69 (ENKO Atab 003.A.11)
79-68-65-69 (ENKO Atab 002.B.I.07) — *HoChyMin*: 79-68-64-69
102-75-27-69 (ENKO Atab 002.B.I.02)
[••]-09-27-69 (ENKO Atab 003.A.07)
25-27-69-09-69 (ENKO Atab 003.A.13)
30-61-54-65-69 (ENKO Atab 002.A.I.36) — *HoChyMin*: 30-61-54-64-69
47-30-107-09-69 (ENKO Atab 002.A.I.39) — *HoChyMin*: 47-30-107-09-69
47-30-107-09-69 (ENKO Atab 002.B.I.06)
]••-••-69 (ENKO Atab 002.A.I.41)
]••-04-35-69 (ENKO Atab 002.A.I.42)

70

70-27-05-61-95 (ENKO Atab 003.A.17)
70-68-70-78[(ENKO Atab 003.A.03)
70-••[(ENKO Atab 003.B.23)
30-70-17-23 (ENKO Atab 004.B.08)
30-70-65 (ENKO Atab 004.B.19) — *HoChyMin*: 30-70-64
30-70-87 (ENKO Atab 002.A.I.32)
69-70-65 (ENKO Atab 002.A.II.37) — *HoChyMin*: 69-70-64
79-70-10-75-09-107 (ENKO Atab 002.B.I.10)
82-70-••[(ENKO Atab 002.B.I.24)
102-70-••-••[(ENKO Atab 004.B.07)
30-107-70-82 (ENKO Atab 004.A.II.3.01)
70-68-70-78[(ENKO Atab 003.A.03)
82-47-70-•• (ENKO Atab 004.A.I.7.01)
107-33-70-27 (ENKO Atab 002.B.I.03) — *HoChyMin*: 107-33-72-27
104-09-76-104-70-27-21 (ENKO Atab 002.B.I.26)
••-70[(ENKO Atab 004.A.II.5.02)
]87-70-89[(ENKO Atab 002.A.I.35)
24-70 (ENKO Atab 003.A.01)
47-70 (ENKO Atab 004.B.13)
62-70 (ENKO Atab 002.B.I.05)
79-70 (ENKO Atab 002.A.I.31)
81-70(-) (ENKO Atab 002.B.II.06)
21-47-70 (ENKO Atab 002.B.I.15, 003.B.19)
78-05-70 (ENKO Atab 002.A.II.41)

110-76-70 (ENKO Atab 003.A.15)
30-44-33-70 (ENKO Atab 004.A.I.1.03) — *HoChyMin*: 30-44-33-70
30-44-33-70 (ENKO Atab 004.A.I.4.02) — *HoChyMin*: 30-44-33-70
30-44-33-70 (ENKO Atab 004.A.I.2.03) — *HoChyMin*: 30-44-33-70 (ENKO Atab 004.A.I.2.03)
30-44-33-70[(ENKO Atab 004.A.II.4.03)
30-44-33-70 (ENKO Atab 004.A.I.5.02, 6.02, 7.02)
30-44-33-70 (ENKO Atab 004.A.II.1.04)
30[-44-]33-70 (ENKO Atab 004.A.II.2.03)
79-09-44-70 (ENKO Atab 002.B.I.14)
102-35-87-70 (ENKO Atab 002.B.I.25)
25-54-30-70[(ENKO Atab 002.B.I.11)
37-65-54-65-70 (ENKO Atab 002.A.I.32) — *HoChyMin*: 37-64-54-64-70
]52-70 (ENKO Atab 002.B.I.22)
]••-107-78-05-70 (ENKO Atab 002.A.I.34)
••-••]••-70 (ENKO Atab 002.B.I.07)
••-••[-••-]110-70 (ENKO Atab 004.A.I.1.01)

72

72-54 (ENKO Atab 003.A.11)
21-72-96 (ENKO Atab 003.A.21)
102-09-54-72-17 (ENKO Atab 003.B.16)
87-72 (ENKO Atab 003.A.20)

74

74-47-••[(ENKO Atab 002.B.II.04)
79-74-65-75 (ENKO Atab 002.B.I.05) — *HoChyMin*: 79-74-64-75
110-74-21 (ENKO Atab 003.A.14)
••-74-87 (ENKO Atab 003.A.06)
04-25-74-54 (ENKO Atab 003.A.12)
04-25-74-95 (ENKO Atab 003.A.14)
38-76-74 (ENKO Atab 002.A.I.29)
75-76-74 (ENKO Atab 004.B.07)

75

75-76-74 (ENKO Atab 004.B.07)
75-87-59-59 (ENKO Atab 002.A.I.29)
04-75-29 (ENKO Atab 003.B.17)
04-75-35 (ENKO Atab 004.B.18)
04-75-35 (ENKO Atab 004.B.20)
44-75-09[(ENKO Atab 002.A.II.33)
44-75-33 (ENKO Atab 003.A.20)

[⁞] 59-75-97-17 (ENKO Atab 002.A.I.30)
76-75-75-••-17[(ENKO Atab 003.B.13) — *HoChyMin*: ••-••-••-••-17[
78-75-75 (ENKO Atab 003.B.26)
102-75-04 (ENKO Atab 003.A.11; A.14)
102-75-04-54 (ENKO Atab 002.A.I.30)
102-75-27-69 (ENKO Atab 002.B.I.02)
102-75-54 (ENKO Atab 003.A.02, A.12)
102-75-78 (ENKO Atab 002.A.I.43)
107-75-75 (ENKO Atab 003.A.18)
••-75-62-60-23 (ENKO Atab 002.A.I.26)
76-75-75-••-17[(ENKO Atab 003.B.13) — *HoChyMin*: ••-••-••-••-17[
82-25-75-59 (ENKO Atab 004.B.12, B.14)
102-25-75-96 (ENKO Atab 004.B.08)
102-35-75-82 (ENKO Atab 002.B.I.01)
107-17-75-08 (ENKO Atab 003.A.19) — *HoChyMin*: 107-17-75-13
30-21-05-75-65 (ENKO Atab 003.A.04) — *HoChyMin*: 30-21-05-75-64
79-70-10-75-09-107 (ENKO Atab 002.B.I.10)
]••-••-75-29 (ENKO Atab 002.A.I.40)
    04-75 (ENKO Atab 002.A.II.35; 003.B.16, B.22)
    102-75 (ENKO Atab 003.A.04, A.10, A.18)
    06-82-75 (ENKO Atab 002.B.I.24)
    21-05-75 (ENKO Atab 002.A.I.31)
    25-04-75 (ENKO Atab 003.B.16)
    62-33-75 (ENKO Atab 002.B.I.27)
    68-25-75 (ENKO Atab 004.B.11)
    78-75-75 (ENKO Atab 003.B.26)
    79-••-75 (ENKO Atab 002.B.I.09)
    87-95-75 (ENKO Atab 002.B.I.23)
    102-04-75 (ENKO Atab 003.A.07)
    102-25-75 (ENKO Atab 002.B.I.22) — *HoChyMin*: 102-25-75
    102-25-75 (ENKO Atab 003.A.15)
    107-75-75 (ENKO Atab 003.A.18)
    30-06-04-75 (ENKO Atab 003.A.15)
    44-47-95-75 (ENKO Atab 004.B.18)
    44-47-95-75 (ENKO Atab 004.B.20)
    56-23-90-75 (ENKO Atab 002.A.I.40)
    78-25-04-75 (ENKO Atab 002.B.I.10)
    79-09-11-75 (ENKO Atab 002.A.I.27)
    79-52-65-75 (ENKO Atab 003.A.06) — *HoChyMin*: 79-52-64-75
    79-74-65-75 (ENKO Atab 002.B.I.05) — *HoChyMin*: 79-74-64-75
    17-09-60-59-75 (ENKO Atab 002.A.I.30) — *HoChyMin*: 17-09-60-59-75
    51-33-47-49-75 (ENKO Atab 002.B.I.04)
    102-••-••-54-75 (ENKO Atab 003.B.14) — *HoChyMin*: 102-••-••-54-75
    ]87-75 (ENKO Atab 002.B.I.03)
    ]••-••-04-75 (ENKO Atab 002.A.I.37)
    ]••-••-••-••-44-75 (ENKO Atab 002.B.I.04)

76

76-75-75-••-17[(ENKO Atab 003.B.13) — *HoChyMin*: ••-••-••-••-17[
- 04-76-54-65 (ENKO Atab 004.B.21) — *HoChyMin*: 04-76-54-64
- 38-76-74 (ENKO Atab 002.A.I.29)
- 54-76-33 (ENKO Atab 003.A.17)
- 62-76-••[(ENKO Atab 004.B.02)
- 79-76-01 (ENKO Atab 002.B.I.09)
- 102-76[(ENKO Atab 002.B.I.16)
- 102-76-29-08 (ENKO Atab 004.B.17) — *HoChyMin*: 102-76-29-13
- 102-76-35 (ENKO Atab 004.B.15)
- 110-76-70 (ENKO Atab 003.A.15)
- 104-09-76-104-70-27-21 (ENKO Atab 002.B.I.26)
  - 38-76 (ENKO Atab 002.A.I.28; 003.A.16) — *HoChyMin*: 38-76 (only in ENKO Atab 003.A.16)
  - 62-76 ¦ (ENKO Atab 002.A.I.34)
  - 102-35-76 (ENKO Atab 003.B.19) — *HoChyMin*: 102-35-96
  -]••-82-08-76(-)●[(ENKO Atab 002.B.I.20) — *HoChyMin*:]••-82-13-76-●[

78

78-05-70 (ENKO Atab 002.A.II.41)
78-25-04-75 (ENKO Atab 002.B.I.10)
78-75-75 (ENKO Atab 003.B.26)
78-95-33-35 (ENKO Atab 004.B.15)
78-96-80 (ENKO Atab 002.B.I.13)
- 21-78-51 (ENKO Atab 004.B.22)
- 21-78-97-17 (ENKO Atab 002.A.I.41)
- 44-78[(ENKO Atab 004.B.22)
- 110-78-08 (ENKO Atab 003.A.11) — *HoChyMin*: 110-78-13
- 110-78-23 (ENKO Atab 004.B.09)
-]••-107-78-05-70 (ENKO Atab 002.A.I.34)
  - 110-78 (ENKO Atab 003.B.15)
  - 21-04-78 (ENKO Atab 002.B.I.16)
  - 80-21-78 (ENKO Atab 002.A.I.35) — *HoChyMin*: 80-21-78
  - 102-75-78 (ENKO Atab 002.A.I.43)
  - (-)110-78[(ENKO Atab 004.A.II.1.03)
  - 70-68-70-78[(ENKO Atab 003.A.03)
  - 102-82-107-78[(ENKO Atab 004.B.10)

79

79[(ENKO Atab 002.A.II.42)
79-01 (ENKO Atab 002.A.I.26)
79-01-59 (ENKO Atab 002.A.I.39)
79-05-61-95 (ENKO Atab 002.A.I.43)
79-08 (ENKO Atab 003.A.21) — *HoChyMin*: 79-13
79-09-11-75 (ENKO Atab 002.A.I.27)

79-09-44-70 (ENKO Atab 002.B.I.14)
79-09-54-107 (ENKO Atab 004.B.06)
79-17-08[(ENKO Atab 002.B.I.17) — *HoChyMin*: 79-17-13[
79-27 (ENKO Atab 002.B.I.12)
79-28-51 (ENKO Atab 002.B.I.11)
79-30-30-05 (ENKO Atab 002.A.I.31) — *HoChyMin*: 79-30-30-05
79-36-••[(ENKO Atab 002.B.II.02)
79-37-82-97 (ENKO Atab 003.A.03)
79-37-107 (ENKO Atab 004.A.II.1.04, A.II.2.03, A.II.4.02)
79-37-107 (ENKO Atab 004.A.I.2.02)
79-37-107 (ENKO Atab 004.A.I.1.03) — *HoChyMin*: 79-37-107
79-37-107 (ENKO Atab 004.A.I.6.01, A.I.7.02, A.II.3.03)
79-37-107 (ENKO Atab 004.A.I.3.02)
79-37-107[(ENKO Atab 004.A.II.3.03)
79-37-107 (ENKO Atab 004.A.I.5.03)
79-52-65-75 (ENKO Atab 003.A.06) — *HoChyMin*: 79-52-64-75
79-54-••[(ENKO Atab 003.B.15)
79-56 (ENKO Atab 003.A.13)
79-56-49-54 (ENKO Atab 003.A.09)
79-61-06-08 (ENKO Atab 002.A.I.29) — *HoChyMin*: 79-61-06-13
79-70 (ENKO Atab 002.A.I.31)
79-68-65-69 (ENKO Atab 002.B.I.07) — *HoChyMin*: 79-68-64-69
79-70-10-75-09-107 (ENKO Atab 002.B.I.10)
79-74-65-75 (ENKO Atab 002.B.I.05) — *HoChyMin*: 79-74-64-75
79-76-01 (ENKO Atab 002.B.I.09)
79-95 (ENKO Atab 003.B.13)
79-••-75 (ENKO Atab 002.B.I.09)

80

80-21-78 (ENKO Atab 002.A.I.35) — *HoChyMin*: 80-21-78
09-80-47 (ENKO Atab 002.B.I.11)
••-90-23-80-•• (ENKO Atab 003.A.21)
23-65-27-80 (ENKO Atab 002.B.I.01) — *HoChyMin*: 23-64-27-80
38-24-80 (ENKO Atab 003.A.17)
78-96-80 (ENKO Atab 002.B.I.13)
102-49-80 (ENKO Atab 004.B.13)
]68-65-80 (ENKO Atab 002.A.I.25) — *HoChyMin*:]68-64-80

81

81-10-17[(ENKO Atab 002.B.II.03) — *HoChyMin*: 81-10-12[
81-70(-) (ENKO Atab 002.B.II.06)

82

82[(ENKO Atab 002.A.II.41)
82-05-24-••[(ENKO Atab 004.B.14)
82-09-107-17 (ENKO Atab 003.A.21)
82-23 (ENKO Atab 004.B.11)
82-23-•• (ENKO Atab 004.A.I.7.02)
82-24-69 (ENKO Atab 004.B.05)
82-25-75-59 (ENKO Atab 004.B.12, B.14)
82-29-97 (ENKO Atab 002.B.I.07, B.I.15)
82-47-51 (ENKO Atab 002.B.I.14)
82-47-70-•• (ENKO Atab 004.A.I.7.01)
82-70-••[(ENKO Atab 002.B.I.24)
82-87 (ENKO Atab 003.A.14)
82-87-••-••[(ENKO Atab 003.B.13)
82-90 (ENKO Atab 003.B.14)
82-97-82 (ENKO Atab 002.A.I.28) — *HoChyMin*: 82-97-51
82-••-••-••[(ENKO Atab 002.B.I.22)
    06-82-75 (ENKO Atab 002.B.I.24)
    38-82-61-95 (ENKO Atab 002.A.I.38)
    68-82-28-95 (ENKO Atab 004.A.I.6.01)
    68-82-28-95 (ENKO Atab 004.A.I.5.02, A.I.5.03) — *HoChyMin*: 68-82-28-95 (ENKO Atab 004.A.I.5.02)
    68-82-28-95 (ENKO Atab 004.A.I.2.02)
    68-82[-28-95 (ENKO Atab 004.A.II.2.02)
    102-82-08 (ENKO Atab 003.B.17) — *HoChyMin*: 102-82-13
    102-82-37-05 (ENKO Atab 003.A.18)
    102-82-107-78[(ENKO Atab 004.B.10)
    107-82-82 (ENKO Atab 003.A.20)
    110-82-08 (ENKO Atab 002.A.I.40) — *HoChyMin*: 110-82-13
    79-37-82-97 (ENKO Atab 003.A.03)
    ]••-82-08-76(-)●[(ENKO Atab 002.B.I.20) — *HoChyMin*:]••-82-13-76-●[
        04-82 (ENKO Atab 004.A.*lat.sup*)
        38-82 (ENKO Atab 002.A.II.38; 003.B.18)
        06-06-82 (ENKO Atab 004.B.02, B.03 and B.06)
        25-06-82 (ENKO Atab 002.B.I.13)
        59-05-82 (ENKO Atab 002.A.I.27) — *HoChyMin*: ••-05-82
        82-97-82 (ENKO Atab 002.A.I.28) — *HoChyMin*: 82-97-51
        102-27-82 (ENKO Atab 002.A.II.42)
        102-62-82 (ENKO Atab 003.A.16)
        104-87-82 (ENKO Atab 002.B.I.06, B.I.25)
        107-82-82 (ENKO Atab 003.A.20)
        ••-107-82 (ENKO Atab 004.A.I.6.01)
        30-107-70-82 (ENKO Atab 004.A.II.3.01)
        87-51-09-82 (ENKO Atab 003.A.12)
        102-35-75-82 (ENKO Atab 002.B.I.01)
        102-54-75-82 (ENKO Atab 003.B.25)
        ]62-82 (ENKO Atab 003.B.12)
        102-35-82[(ENKO Atab 003.A.22)
        110-62-82[(ENKO Atab 003.B.26)

62-96-69-82[(ENKO Atab 003.A.08)

87

87[(ENKO Atab 003.B.12)
87-••[(ENKO Atab 002.A.II.36)
87-23 (ENKO Atab 003.B.15)
87-51-09-82 (ENKO Atab 003.A.12)
87-56 (ENKO Atab 003.A.13)
87-68-28-107-36 (ENKO Atab 002.B.I.12)
87-72 (ENKO Atab 003.A.20)
87-90-44-••[(ENKO Ataba 003.A.02)
87-95-75 (ENKO Atab 002.B.I.23)
- 09-87-61 (ENKO Atab 004.A.I.7.01)
- 25-87-59-89 (ENKO Atab 003.A.13)
- 27-87-27 (ENKO Atab 002.B.I.08)
- 38-87-08 (ENKO Atab 002.B.I.23) — *HoChyMin*: 38-87-13
- 38-87-87-27 (ENKO Atab 002.B.I.23)
- 38-87-87-47-95 (ENKO Atab 002.B.I.09)
- 62-87-69 (ENKO Atab 002.A.I.42) — *HoChyMin*: 62-91-69
- 75-87-59-59 (ENKO Atab 002.A.I.29)
- 82-87 (ENKO Atab 003.A.14)
- 82-87-••-••[(ENKO Atab 003.B.13)
- 102-87-59[(ENKO Atab 004.B.17)
- 104-87-82 (ENKO Atab 002.B.I.06, B.I.25)
- 38-87-87-27 (ENKO Atab 002.B.I.23)
- 38-87-87-47-95 (ENKO Atab 002.B.I.09)
- 102-35-87-70 (ENKO Atab 002.B.I.25)
-]87-70-89[(ENKO Atab 002.A.I.35)
-]87-75 (ENKO Atab 002.B.I.03)
  - 30-70-87 (ENKO Atab 002.A.I.32)
  - 107-11-87 (ENKO Atab 002.A.I.29; 002.B.I.10; 003.B.18) — *HoChyMin*: 107-11-87 (ENKO Atab 002.A.I.29)
  - ••-74-87 (ENKO Atab 003.A.06)
  - 102-04-87[(ENKO Atab 004.B.21)
  - 107-••-87[(ENKO Atab 003.B.14) — *HoChyMin*: 107-••-••[

89

89-24 (ENKO Atab 004.B.08)
- 21-60-89-17 (ENKO Atab 003.B.21)
- 104-06-89[(ENKO Atab 002.B.II.09)
-]87-70-89[(ENKO Atab 002.A.I.35)
  - 01-28-107-89 (ENKO Atab 002.A.I.32)
  - 25-87-59-89 (ENKO Atab 003.A.13)
  - 54-65-27-89 (ENKO Atab 002.A.I.41) — *HoChyMin*: 54-64-27-89

90

23-90-33-27[(ENKO Atab 003.B.16)
87-90-44-••[(ENKO Atab 003.A.02)
••-90-23-80-•• (ENKO Atab 003.A.21)
••-90-69 (ENKO Atab 002.B.I.27)
56-23-90-75 (ENKO Atab 002.A.I.40)
107-06-06-90-08 (ENKO Atab 004.B.13) — *HoChyMin*: 107-06-06-90-13
]••-06-90 (ENKO Atab 002.A.I.35)
25-90 (ENKO Atab 003.A.20)
82-90 (ENKO Atab 003.B.14)
25-27-90 (ENKO Atab 002.A.I.36)
27-09-90 (ENKO Atab 002.B.I.24)
104-09-90 (ENKO Atab 004.B.09)
••-54-05-60-90 (ENKO Atab 004.B.10) — *HoChyMin*: ••-54-05-60-90

92

12-92-38[(ENKO Atab 004.A.I.5.01)
104-92-09-60-59 (ENKO Atab 004.B.04, B.05)
]••-29-23-92-97 (ENKO Atab 002.B.I.02)

95

95[(ENKO Atab 004.B.16)
78-95-33-35 (ENKO Atab 004.B.15)
87-95-75 (ENKO Atab 002.B.I.23)
44-47-95-75 (ENKO Atab 004.B.18)
44-47-95-75 (ENKO Atab 004.B.20)
102-38-95-51 (ENKO Atab 004.A.I.2.01)
]17-95-05-27-107 (ENKO Atab 004.B.19)
]47-95-61-••[(ENKO Atab 004.A.II.1.02)
]33-95[(ENKO Atab 004.A.I.1.02)
102-68-95[(ENKO Atab 004.A.I.3.01)
25-95 (ENKO Atab 002.A.II.34)
79-95 (ENKO Atab 003.B.13)
102-95 (ENKO Atab 003.B.18)
05-107-95 (ENKO Atab 002.B.I.21)
104-110-95 (ENKO Atab 004.A.I.4.01)
107-30-95 (ENKO Atab 003.A.19)
04-25-74-95 (ENKO Atab 003.A.14)
23-30-110-95 (ENKO Atab 002.A.I.33)
38-82-61-95 (ENKO Atab 002.A.I.38)
68-82-28-95 (ENKO Atab 004.A.I.6.01)
68-82-28-95 (ENKO Atab 004.A.I.5.02, A.I.5.03) — *HoChyMin*: 68-82-28-95 (ENKO Atab 004.A.I.5.02)
68-82-28-95 (ENKO Atab 004.A.I.2.02)

68-82[-28-95 (ENKO Atab 004.A.II.2.02)
79-05-61-95 (ENKO Atab 002.A.I.43)
25-09-49-28-95 (ENKO Atab 003.A.03, A.10)
38-87-87-47-95 (ENKO Atab 002.B.I.09)
62-17-51-61-95 (ENKO Atab 002.A.I.37) — *HoChyMin*: 62-17-51-61-95
70-27-05-61-95 (ENKO Atab 003.A.17)
]••-30-95 (ENKO Atab 004.A.I.8.01)

96

96-08 (ENKO Atab 003.B.15) — *HoChyMin*: 96-13
96-35 (ENKO Atab 003.B.24)
21-96-69-65 (ENKO Atab 003.A.09) — *HoChyMin*: 21-96-69-64
38-96-••[(ENKO Atab 002.B.II.05)
47-96-27-69 (ENKO Atab 003.A.11)
56-96-44 (ENKO Atab 003.A.18)
62-96-69-82[(ENKO Atab 003.A.08)
78-96-80 (ENKO Atab 002.B.I.13)
102-96-62 (ENKO Atab 003.B.16)
30-21-96-••[(ENKO Atab 003.A.06)
38-97-96-••[(ENKO Atab 003.A.07)
62-30-96-62 (ENKO Atab 002.A.I.30)
04-96 (ENKO Atab 003.A.19)
21-72-96 (ENKO Atab 003.A.21)
38-68-96 (ENKO Atab 004.A.I.3.01)
68-25-96 (ENKO Atab 004.A.*lat.sup*.)
102-35-96 (ENKO Atab 003.A.17)
102-35-96 (ENKO Atab 002.B.I.16)
102-25-75-96 (ENKO Atab 004.B.08)
]••-••-96 (ENKO Atab 004.A.I.3.01)

97

10-97-17 (ENKO Atab 002.A.I.31)
38-97-96-••[(ENKO Atab 003.A.07)
82-97-82 (ENKO Atab 002.A.I.28) — *HoChyMin*: 82-97-51
••-97-97 (ENKO Atab 003.A.09)
21-78-97-17 (ENKO Atab 002.A.I.41)
38-12-97-17 (ENKO Atab 002.B.I.13)
47-17-97-17 (ENKO Atab 003.A.13)
[|] 59-75-97-17 (ENKO Atab 002.A.I.30)
68-25-97-17 (ENKO Atab 003.A.15)
••-29-97-51-17 (ENKO Atab 002.A.I.34)
09-97 (ENKO Atab 004.A.II.3.02)
12-97 (ENKO Atab 002.A.I.27)
37-97 (ENKO Atab 002.B.I.11)
38-12-97 (ENKO Atab 003.B.23, 004.B.14)

68-25-97 (ENKO Atab 004.B.10)
82-29-97 (ENKO Atab 002.B.I.07, B.I.15)
••-97-97 (ENKO Atab 003.A.09)
79-37-82-97 (ENKO Atab 003.A.03)
]••-29-23-92-97 (ENKO Atab 002.B.I.02)

102

102-04 (ENKO Atab 002.A.I.33)
102-04-75 (ENKO Atab 003.A.07)
102-04-87[(ENKO Atab 004.B.21)
102-08 (ENKO Atab 002.B.I.09, B.14) — *HoChyMin*: 102-13
102-08-08 (ENKO Atab 004.B.11) — *HoChyMin*: 102-13-13
102-09-54-72-17 (ENKO Atab 003.B.16)
102-25-08 (ENKO Atab 002.B.I.02) — *HoChyMin*: 102-25-13
102-25-75 (ENKO Atab 002.B.I.22) — *HoChyMin*: 102-25-75
102-25-75 (ENKO Atab 003.A.15)
102-25-75-96 (ENKO Atab 004.B.08)
102-27-82 (ENKO Atab 002.A.II.42)
102-28-54 (ENKO Atab 003.A.05)
102-29-17-17 (ENKO Atab 003.A.02)
102-35-27 (ENKO Atab 002.B.I.12)
102-35-75-82 (ENKO Atab 002.B.I.01)
102-35-76 (ENKO Atab 003.B.19) — *HoChyMin*: 102-35-96
102-35-82[(ENKO Atab 003.A.22)
102-35-87-70 (ENKO Atab 002.B.I.25)
102-35-96 (ENKO Atab 003.A.17)
102-35-96 (ENKO Atab 002.B.I.16)
102-38-95-51 (ENKO Atab 004.A.I.2.01)
102-49-80 (ENKO Atab 004.B.13)
102/110-51-08 (ENKO Atab 002.A.I.29) — *HoChyMin*: 110-51-13
102-51 (ENKO Atab 002.B.I.11)
102-54-••[(ENKO Atab 003.B.11)
102-54-75-82 (ENKO Atab 003.B.25)
102-56-33-27 (ENKO Atab 003.B.17)
102-60-27 (ENKO Atab 004.B.16)
102-61-21-••[(ENKO Atab 004.B.11)
102-62-82 (ENKO Atab 003.A.16)
102-65-24 (ENKO Atab 004.B.04) — *HoChyMin*: 102-64-24
102-68-95[(ENKO Atab 004.A.I.3.01)
102-70-••-••[(ENKO Atab 004.B.07)
102-75 (ENKO Atab 003.A.04, A.10, A.18)
102-75-04 (ENKO Atab 003.A.11; A.14)
102-75-04-54 (ENKO Atab 002.A.I.30)
102-75-27-69 (ENKO Atab 002.B.I.02)
102-75-54 (ENKO Atab 003.A.02, A.12)
102-75-78 (ENKO Atab 002.A.I.43)
102-76[(ENKO Atab 002.B.I.16)
102-76-29-08 (ENKO Atab 004.B.17) — *HoChyMin*: 102-76-29-13

102-76-35 (ENKO Atab 004.B.15)
102-82-08 (ENKO Atab 003.B.17) — *HoChyMin*: 102-82-13
102-82-37-05 (ENKO Atab 003.A.18)
102-82-107-78[(ENKO Atab 004.B.10)
102-87-59[(ENKO Atab 004.B.17)
102-95 (ENKO Atab 003.B.18)
102-96-62 (ENKO Atab 003.B.16)
102-••-••-54-75 (ENKO Atab 003.B.14) — *HoChyMin*: 102-••-••-54-75
102-••[(ENKO Atab 003.B.16)
102[••-••]17-95-05-27-107 (ENKO Atab 004.B.19)
102[(ENKO Atab 002.B.I.14; 004.B.08)

104

]↓ 104[(ENKO Atab 004.A.I.8.02)
104-••[(ENKO Atab 003.B.21)
104-06-89[(ENKO Atab 002.B.II.09)
104-09-76-104-70-27-21 (ENKO Atab 002.B.I.26)
104-09-90 (ENKO Atab 004.B.09)
104-12-33-25 (ENKO Atab 002.B.I.26) — *HoChyMin*: 107-12-33-25
104-23 (ENKO Atab 003.A.06)
104-24 (ENKO Atab 004.B.02, B.03, B.06) — *HoChyMin*: 38-24 (ENKO Atab 004.B.06)
104-37-28-09 (ENKO Atab 003.B.15) — *HoChyMin*: 104-37-82-09
104-56-05 (ENKO Atab 003.A.18)
104-56-08 (ENKO Atab 003.B.22) — *HoChyMin*: 104-56-13
104-60-33 (ENKO Atab 003.A.01)
104-69-51 (ENKO Atab 002.A.I.28)
104-87-82 (ENKO Atab 002.B.I.06, B.I.25)
104-92-09-60-59 (ENKO Atab 004.B.04, B.05)
104-110-95 (ENKO Atab 004.A.I.4.01)
104[••-••-••]↓ (ENKO Atab 004.A.II.1.03)
]104-11-24 (ENKO Atab 002.B.I.01)
    104-09-76-104-70-27-21 (ENKO Atab 002.B.I.26)
    ]••-104-••-••[(ENKO Atab 004.A.II.1.01)

107

107-06-06-90-08 (ENKO Atab 004.B.13) — *HoChyMin*: 107-06-06-90-13
107-11-87 (ENKO Atab 002.A.I.29; 002.B.I.10; 003.B.18) — *HoChyMin*: 107-11-87 (ENKO Atab 002.A.I.29)
107-17-75-08 (ENKO Atab 003.A.19) — *HoChyMin*: 107-17-75-13
107-30-95 (ENKO Atab 003.A.19)
107-33-70-27 (ENKO Atab 002.B.I.03) — *HoChyMin*: 107-33-72-27
107-51 (ENKO Atab 002.A.II.36)
107-56-69 (ENKO Atab 003.B.14)
107-60 (ENKO Atab 003.B.18)
107-75-75 (ENKO Atab 003.A.18)

107-82-82 (ENKO Atab 003.A.20)
107-••-87[(ENKO Atab 003.B.14) — *HoChyMin*: 107-••-••[
107[(ENKO Atab 004.B.09)
05-107-95 (ENKO Atab 002.B.I.21)
12-107-27 (ENKO Atab 002.B.I.07)
30-107-70-82 (ENKO Atab 004.A.II.3.01)
38-107-09 (ENKO Atab 002.A.I.42) — *HoChyMin*: 38-110-09
47-107-••[(ENKO Atab 002.B.II.07)
••-107-82 (ENKO Atab 004.A.I.6.01)
01-28-107-89 (ENKO Atab 002.A.I.32)
47-30-107-09-69 (ENKO Atab 002.A.I.39) — *HoChyMin*: 47-30-107-09-69
47-30-107-09-69 (ENKO Atab 002.B.I.06)
82-09-107-17 (ENKO Atab 003.A.21)
102-82-107-78[(ENKO Atab 004.B.10)
87-68-28-107-36 (ENKO Atab 002.B.I.12)
]••-107-78-05-70 (ENKO Atab 002.A.I.34)
09-107 (ENKO Atab 002.B.I.05)
79-37-107 (ENKO Atab 004.A.II.1.04, A.II.2.03, A.II.4.02)
79-37-107 (ENKO Atab 004.A.I.2.02)
79-37-107 (ENKO Atab 004.A.I.1.03) — *HoChyMin*: 79-37-107
79-37-107 (ENKO Atab 004.A.I.6.01, A.I.7.02, A.II.3.03)
79-37-107 (ENKO Atab 004.A.I.3.02)
79-37-107[(ENKO Atab 004.A.II.3.03)
79-37-107 (ENKO Atab 004.A.I.5.03)
06-09-06-107 (ENKO Atab 004.B.02)
06-09-06-107 (ENKO Atab 004.B.03)
79-09-54-107 (ENKO Atab 004.B.06)
79-70-10-75-09-107 (ENKO Atab 002.B.I.10)
]17-95-05-27-107 (ENKO Atab 004.B.19)

110

110-04 (ENKO Atab 003.B.20)
110-06[(ENKO Atab 003.B.25)
110-29-17 (ENKO Atab 002.A.I.37)
110-35-05-17 (ENKO Atab 003.A.18)
110-37-21-17-23 (ENKO Atab 002.B.I.25)
102/110-51-08 (ENKO Atab 002.A.I.29) — *HoChyMin*: 110-51-13
110-51-••[(ENKO Atab 002.B.II.08)
110-60 (ENKO Atab 003.A.10)
110-62 (ENKO Atab 002.A.I.28)
110-62-82[(ENKO Atab 003.B.26)
110-74-21 (ENKO Atab 003.A.14)
110-76-70 (ENKO Atab 003.A.15)
110-78 (ENKO Atab 003.B.15)
(-)110-78[(ENKO Atab 004.A.II.1.03)
110-78-08 (ENKO Atab 003.A.11) — *HoChyMin*: 110-78-13
110-78-23 (ENKO Atab 004.B.09)
110-82-08 (ENKO Atab 002.A.I.40) — *HoChyMin*: 110-82-13

110[•• (ENKO Atab 004.A.II.2.01)
(-)110-••-59/09-••[(ENKO Atab 002.A.II.39) — *HoChyMin*: 27-08-110-••-••-72[
05-110-27 (ENKO Atab 002.B.I.08)
104-110-95 (ENKO Atab 004.A.I.4.01)
23-30-110-95 (ENKO Atab 002.A.I.33)
••-••[-••-]110-70 (ENKO Atab 004.A.I.1.01)
28-110[(ENKO Atab 004.B.05)
••-30-110 (ENKO Atab 002.A.I.33)

CM 3

01

38-01-04-82-09 (RASH Atab 004.B.16)

02

02-102, or 102-02 (RASH Mvas 001) — *HoChyMin*: 02-102
44-02-98-23 (RASH Atab 001.A.01-02) — *HoChyMin*: 44-02-98-23
102-02-71-100 (RASH Atab 004.A.11)
102-02-100 (RASH Atab 004.A.04)

04

04-08-36 (RASH Atab 001.A.04) — *HoChyMin*: 04-13-36
04-08-100 (RASH Atab 004.A.10)
04-71-100 (RASH Atab 004.A.05)
04-91 (RASH Atab 001.B.*lat.sin*)
41-04-100 (RASH Atab 004.A.09) — *HoChyMin*: 37-04-100
102-04-04-96 (RASH Atab 004.A.05)
38-01-04-82-09 (RASH Atab 004.B.16)
102-04-04-96 (RASH Atab 004.A.05)
104-09-04-55-96 (RASH Atab 004.A.11)
(-)23-04-91 (RASH Atab 001.B.05)
104-04 (RASH Atab 002.02; 003.02) — *HoChyMin*: 102-04 (RASH Atab 002.02)

05

38-05-21-97 (RASH Atab 003.01)
102-37-06-05-23 (RASH Atab 001.A.02-03)
71-50-05-56/23 (SYRI Psce 001) — *HoChyMin*: 71-50-05-56

06

06 (RASH Atab 004.B.19)
06-09[(RASH Atab 001.B.04)
06-25 (RASH Atab 001.A.05)
06-70 (RASH Atab 001.A.03)
[[••]]25-06-100-40 (RASH Atab 004.B.12) — *HoChyMin*: 23-25-06-100-40
44-06-100-91 (RASH Atab 001.A.05)
102-37-06-05-23 (RASH Atab 001.A.02-03)

104-25-06-09 (RASH Atab 004.A.03) — *HoChyMin*: 104-58-06-09
104-71-06-23 (RASH Atab 004.A.06)
••-70-••-82-06-96-41 (RASH Atab 004.B.17) — *HoChyMin*: 55-70-••-••-06-96-37
]••-06[(RASH Atab 002.03)

07

]••-07-•• (RASH Atab 003.03)
99[ ]07-53-27-75-•• (RASH Atab 003.01)
110-••-07[(RASH Atab 003.03)
]07 (RASH Atab 002.02)

08

04-08-36 (RASH Atab 001.A.04) — *HoChyMin*: 04-13-36
04-08-100 (RASH Atab 004.A.10)
]08[(RASH Atab 001.B.04) — *HoChyMin*:]13[

09

104-09-04-55-96 (RASH Atab 004.A.11)
104-09-55-09-70 (RASH Atab 004.B.14)
104-09-71-100 (RASH Atab 004.A.09)
82-58-55-09-70 (RASH Atab 004.B.19)
104-09-55-09-70 (RASH Atab 004.B.14)
06-09[(RASH Atab 001.B.04)
55-09 (RASH Atab 004.A.01)
25-51-09 (RASH Atab 004.A.08)
104-25-06-09 (RASH Atab 004.A.03) — *HoChyMin*: 104-58-06-09
38-01-04-82-09 (RASH Atab 004.B.16)
102-75-51-55-82-21-09 (RASH Atab 004.B.16)
]••-09 (RASH Atab 001.B.01) — *HoChyMin*:]••-••

11

92-11-96 (RASH Atab 004.B.19)

19

19-23 (RASH Atab 001.B.07)
19-87-73-96 (RASH Atab 004.B.12) — *HoChyMin*: 19-87-72-96
19-91-73-23 (RASH Atab 004.B.14)
19-94/35-23 (RASH Atab 001.A.04) — *HoChyMin*: 19-94-23

21

21 (RASH Atab 003.05.*lat.dex*.)
21-82-75-51 (RASH Atab 004.B.13)
38-05-21-97 (RASH Atab 003.01)
102-75-51-55-82-21-09 (RASH Atab 004.B.16)

23

23 (RASH Atab 003.04.*lat.dex*.)
23-91-110-92 (RASH Atab 001.B.05)
23-105-97 (RASH Atab 001.B.*lat.sin*.)
23[(RASH Atab 002.04)
102-23-51-28 (RASH Atab 004.A.02)
(-)23-04-91 (RASH Atab 001.B.05)
]38-23-•• (RASH Atab 001.B.07) — *HoChyMin*:]38-27-••
75-86-23[(RASH Atab 003.02) — *HoChyMin*: 75-82-23[
19-23 (RASH Atab 001.B.07)
102-23 (RASH Aéti 001)
104-36-[[23]] (RASH Atab 001.A.03)
19-91-73-23 (RASH Atab 004.B.14)
44-02-98-23 (RASH Atab 001.A.01-02) — *HoChyMin*: 44-02-98-23
71-50-05-56/23 (SYRI Psce 001) — *HoChyMin*: 71-50-05-56
104-71-06-23 (RASH Atab 004.A.06)
102-37-06-05-23 (RASH Atab 001.A.02-03)

25

[[••]]25-06-100-40 (RASH Atab 004.B.12) — *HoChyMin*: 23-25-06-100-40
25-44-40 (RASH Atab 001.B.06)
25-51-09 (RASH Atab 004.A.08)
55-25-51-40 (RASH Atab 004.A.04)
102-25-87 (RASH Atab 004.A.01)
102-25-87-51 (RASH Atab 004.B.15)
104-25-06-09 (RASH Atab 004.A.03) — *HoChyMin*: 104-58-06-09
38-105-25/102-58 (RASH Atab 004.A.06) — *HoChyMin*: 38-105-23-58
06-25 (RASH Atab 001.A.05)

27

27-69 (RASH Atab 004.B.17) — *HoChyMin*: 27-69
27[(RASH Atab 001.B.06)
99[ ]07-53-27-75-•• (RASH Atab 003.01)
]27 (RASH Atab 001.A.06)

28

92-28-95-100 (RASH Atab 004.A.11)
104-28-92 (RASH Atab 001.A.01)
51-28 (RASH Atab 004.A.01; A.05; A.06; A.07; A.08; A.10; A.11; B.14; B.15; B.18)
102-23-51-28 (RASH Atab 004.A.02)

35

19-94/35-23 (RASH Atab 001.A.04) — *HoChyMin*: 19-94-23
38-35-100 (RASH Atab 004.A.07)
102-35-82-51 (RASH Atab 004.A.18) — *HoChyMin*: 103-35-82-51

36

104-36-[[23]] (RASH Atab 001.A.03)
04-08-36 (RASH Atab 001.A.04) — *HoChyMin*: 04-13-36
]40-36 (RASH Atab 001.B.03)

37

102-37-06-05-23 (RASH Atab 001.A.02-03)

38

38-01-04-82-09 (RASH Atab 004.B.16)
38-05-21-97 (RASH Atab 003.01)
38-35-100 (RASH Atab 004.A.07)
38-105-25/102-58 (RASH Atab 004.A.06) — *HoChyMin*: 38-105-23-58
]38-23-•• (RASH Atab 001.B.07) — *HoChyMin*:]38-27-••

40

(-)40 (RASH Atab 001.B.02)
]40-36 (RASH Atab 001.B.03)
25-44-40 (RASH Atab 001.B.06)
[[••]]25-06-100-40 (RASH Atab 004.B.12) — *HoChyMin*: 23-25-06-100-40
41-71-100-40 (RASH Atab 004.A.09) — *HoChyMin*: 37-71-100-40
55-25-51-40 (RASH Atab 004.A.04)

41

41-71-100-40 (RASH Atab 004.A.09) — *HoChyMin*: 37-71-100-40
41-04-100 (RASH Atab 004.A.09) — *HoChyMin*: 37-04-100
••-70-••-82-06-96-41 (RASH Atab 004.B.17) — *HoChyMin*: 55-70-••-••-06-96-37

44

44-02-98-23 (RASH Atab 001.A.01-02) — *HoChyMin*: 44-02-98-23
44-06-100-91 (RASH Atab 001.A.05)
44-91(-) (RASH Atab 001.A.06) — *HoChyMin*: 44-92(-)
25-44-40 (RASH Atab 001.B.06)

50

71-50-05-56/23 (SYRI Psce 001) — *HoChyMin*: 71-50-05-56

51

51-28 (RASH Atab 004.A.01; A.05; A.06; A.07; A.08; A.10; A.11; B.14; B.15; B.18)
25-51-09 (RASH Atab 004.A.08)
55-25-51-40 (RASH Atab 004.A.04)
102-23-51-28 (RASH Atab 004.A.02)
102-75-51-55-82-21-09 (RASH Atab 004.B.16)
21-82-75-51 (RASH Atab 004.B.13)
102-25-87-51 (RASH Atab 004.B.15)
102-35-82-51 (RASH Atab 004.A.18) — *HoChyMin*: 103-35-82-51
102-74-75-51 (RASH Atab 004.B.17)
102-74-82-51 (RASH Atab 004.A.02)

52

52/53-107-112 (RASH Aéti 002) — *CMI*: 52-107-64

53

52/53-107-112 (RASH Aéti 002) — *CMI*: 52-107-64
99[ ]07-53-27-75-•• (RASH Atab 003.01)

55

55-09 (RASH Atab 004.A.01)
55-25-51-40 (RASH Atab 004.A.04)
55-70 (RASH Atab 004.B.15; B.18)
    82-58-55-09-70 (RASH Atab 004.B.19)
    104-09-55-09-70 (RASH Atab 004.B.14)
    104-09-04-55-96 (RASH Atab 004.A.11)
    102-75-51-55-82-21-09 (RASH Atab 004.B.16)

56

71-50-05-56/23 (SYRI Psce 001) — *HoChyMin*: 71-50-05-56

58

82-58-55-09-70 (RASH Atab 004.B.19)
    38-105-25/102-58 (RASH Atab 004.A.06) — *HoChyMin*: 38-105-23-58

69

27-69 (RASH Atab 004.B.17) — *HoChyMin*: 27-69

70

••-70-••-82-06-96-41 (RASH Atab 004.B.17) — *HoChyMin*: 55-70-••-••-06-96-37
    06-70 (RASH Atab 001.A.03)
    55-70 (RASH Atab 004.B.15; B.18)
    82-58-55-09-70 (RASH Atab 004.B.19)
    104-09-55-09-70 (RASH Atab 004.B.14)

71

71-50-05-56/23 (SYRI Psce 001) — *HoChyMin*: 71-50-05-56
    04-71-100 (RASH Atab 004.A.05)
    41-71-100-40 (RASH Atab 004.A.09) — *HoChyMin*: 37-71-100-40
    104-71-06-23 (RASH Atab 004.A.06)
    102-02-71-100 (RASH Atab 004.A.11)
    104-09-71-100 (RASH Atab 004.A.09)

73

73-92-100 (RASH Atab 004.B.18)
19-87-73-96 (RASH Atab 004.B.12) — *HoChyMin*: 19-87-72-96
19-91-73-23 (RASH Atab 004.B.14)

74

102-74-75-51 (RASH Atab 004.B.17)
102-74-82-51 (RASH Atab 004.A.02)

75

75-86-23[(RASH Atab 003.02) — *HoChyMin*: 75-82-23[
[ ]75-•• (RASH Atab 003.03)
102-75-51-55-82-21-09 (RASH Atab 004.B.16)
21-82-75-51 (RASH Atab 004.B.13)
102-74-75-51 (RASH Atab 004.B.17)
99[ ]07-53-27-75-•• (RASH Atab 003.01)

82

82-58-55-09-70 (RASH Atab 004.B.19)
21-82-75-51 (RASH Atab 004.B.13)
102-35-82-51 (RASH Atab 004.A.18) — *HoChyMin*: 103-35-82-51
102-74-82-51 (RASH Atab 004.A.02)
38-01-04-82-09 (RASH Atab 004.B.16)
••-70-••-82-06-96-41 (RASH Atab 004.B.17) — *HoChyMin*: 55-70-••-••-06-96-37
102-75-51-55-82-21-09 (RASH Atab 004.B.16)

87

19-87-73-96 (RASH Atab 004.B.12) — *HoChyMin*: 19-87-72-96
102-25-87-51 (RASH Atab 004.B.15)
102-25-87 (RASH Atab 004.A.01)

91

91 (RASH Mvas 001)
19-91-73-23 (RASH Atab 004.B.14)
23-91-110-92 (RASH Atab 001.B.05)
44-91(-) (RASH Atab 001.A.06) — *HoChyMin*: 44-92(-)

(-)23-04-91 (RASH Atab 001.B.05)
04-91 (RASH Atab 001.B.*lat.sin*)
44-06-100-91 (RASH Atab 001.A.05)

92

92-11-96 (RASH Atab 004.B.19)
92-28-95-100 (RASH Atab 004.A.11)
73-92-100 (RASH Atab 004.B.18)
104-28-92 (RASH Atab 001.A.01)
23-91-110-92 (RASH Atab 001.B.05)

94

19-94/35-23 (RASH Atab 001.A.04) — *HoChyMin*: 19-94-23

95

92-28-95-100 (RASH Atab 004.A.11)

96

••-70-••-82-06-96-41 (RASH Atab 004.B.17) — *HoChyMin*: 55-70-••-••-06-96-37
92-11-96 (RASH Atab 004.B.19)
19-87-73-96 (RASH Atab 004.B.12) — *HoChyMin*: 19-87-72-96
102-04-04-96 (RASH Atab 004.A.05)
104-09-04-55-96 (RASH Atab 004.A.11)

97

23-105-97 (RASH Atab 001.B.*lat.sin*.)
38-05-21-97 (RASH Atab 003.01)

98

44-02-98-23 (RASH Atab 001.A.01-02) — *HoChyMin*: 44-02-98-23

99

99[ ]07-53-27-75-•• (RASH Atab 003.01)

100

[[••]]25-06-100-40 (RASH Atab 004.B.12) — *HoChyMin*: 23-25-06-100-40
41-71-100-40 (RASH Atab 004.A.09) — *HoChyMin*: 37-71-100-40
44-06-100-91 (RASH Atab 001.A.05)
    04-08-100 (RASH Atab 004.A.10)
    04-71-100 (RASH Atab 004.A.05)
    38-35-100 (RASH Atab 004.A.07)
    41-04-100 (RASH Atab 004.A.09) — *HoChyMin*: 37-04-100
    73-92-100 (RASH Atab 004.B.18)
    102-02-100 (RASH Atab 004.A.04)
    92-28-95-100 (RASH Atab 004.A.11)
    102-02-71-100 (RASH Atab 004.A.11)
    104-09-71-100 (RASH Atab 004.A.09)

102

102-02-71-100 (RASH Atab 004.A.11)
102-02-100 (RASH Atab 004.A.04)
102-04-04-96 (RASH Atab 004.A.05)
102-23 (RASH Aéti 001)
102-23-51-28 (RASH Atab 004.A.02)
102-25-87 (RASH Atab 004.A.01)
102-25-87-51 (RASH Atab 004.B.15)
102-35-82-51 (RASH Atab 004.A.18) — *HoChyMin*: 103-35-82-51
102-37-06-05-23 (RASH Atab 001.A.02-03)
102-74-75-51 (RASH Atab 004.B.17)
102-74-82-51 (RASH Atab 004.A.02)
102-75-51-55-82-21-09 (RASH Atab 004.B.16)
    38-105-25/102-58 (RASH Atab 004.A.06) — *HoChyMin*: 38-105-23-58
        02-102, or 102-02 (RASH Mvas 001) — *HoChyMin*: 02-102

104

104-04 (RASH Atab 002.02; 003.02) — *HoChyMin*: 102-04 (RASH Atab 002.02)
104-09-04-55-96 (RASH Atab 004.A.11)
104-09-55-09-70 (RASH Atab 004.B.14)
104-09-71-100 (RASH Atab 004.A.09)
104-25-06-09 (RASH Atab 004.A.03) — *HoChyMin*: 104-58-06-09
104-28-92 (RASH Atab 001.A.01)
104-36-[[23]] (RASH Atab 001.A.03)
104-71-06-23 (RASH Atab 004.A.06)

105

23-105-97 (RASH Atab 001.B.*lat.sin*.)
38-105-25/102-58 (RASH Atab 004.A.06) — *HoChyMin*: 38-105-23-58

107

52/53-107-112 (RASH Aéti 002) — *CMI*: 52-107-64

110

23-91-110-92 (RASH Atab 001.B.05)

110 (CM 2 variant)

110-••-07[(RASH Atab 003.03)

112

52/53-107-112 (RASH Aéti 002) — *CMI*: 52-107-64

ADDENDA

01

01-69-04 67, or 67 04-69-01 (CYPR Psce 007) — *CMI*: 01-69-12-98

04

04-25/27-97 (ENKO Mins 003) — *CMI*: 04-27-97
01-69-04 67, or 67 04-69-01 (CYPR Psce 007) — *CMI*: 01-69-12-98
]••-23 ¦ 47, or]••-23-04-47 (MARO Avas 003) — *CMI*: 38-23-11-47

05

59-05(-)08 (ENKO Pblo 002) — *CMI*: •• | 05-08
87-50-05 (TIRY Avas 002)

07

87/82(?)(-)23-07 (ENKO Psce 003) — *CMI*: 82-••-23-07

08

59-05(-)08 (ENKO Pblo 002) — *CMI*: •• | 05-08

12

12-23, or 23-12 (PARA Psce 002) — *CMI*: 12-23
01-69-04 67 or 67 04-69-01 (CYPR Psce 007) — *CMI*: 01-69-12-98

13

13-82-25 (IDAL Avas 003) — *CMI*: ••-••-27

23

23-104 (ENKO Mins 005)
23[(KITI Avas 020) — *CMI*: | 23
87/82(?)(-)23-07 (ENKO Psce 003) — *CMI*: 82-••-23-07

12-23, or 23-12 (PARA Psce 002) — *CMI*: 12-23
82-91-23 (MARO Avas 002)
]••-23 ⌊ 47, or]••-23-04-47 (MARO Avas 003) — *CMI*: 38-23-11-47

25

04-25/27-97 (ENKO Mins 003) — *CMI*: 04-27-97
13-82-25 (IDAL Avas 003) — *CMI*: ••-••-27

27

04-25/27-97 (ENKO Mins 003) — *CMI*: 04-27-97

33

33/46-98 (KLAV Avas 001) — *CMI*: 33-98

41

41-41-97 (TIRY Abou 001)
41-41-97 (TIRY Abou 001)

46

33/46-98 (KLAV Avas 001) — *CMI*: 33-98

47

]••-23 ⌊ 47, or]••-23-04-47 (MARO Avas 003) — *CMI*: 38-23-11-47

50

87-51-05 (TIRY Avas 002)

53

]••-53-••[(SANI Avas 001) — *CMI*: 23-82-104

59

59-05(-)08 (ENKO Pblo 002) — *CMI*: •• | 05-08

61

61-101 (MAAP Avas 005)
••-61 (KITI Avas 021) — *CMI*: 23-06

64

64-98 (ENKO Psce 005) — *CMI*: Unspecified

67

01-69-04 67 or 67 04-69-01 (CYPR Psce 007) — *CMI*: 01-69-12-98

69

01-69-04 67, or 67 04-69-01 (CYPR Psce 007) — *CMI*: 01-69-12-98

82

87/82(?)(-)23-07 (ENKO Psce 003) — *CMI*: 82-••-23-07
82-91-23 (MARO Avas 002)
13-82-25 (IDAL Avas 003) — *CMI*: ••-••-27

87

87-50-05 (TIRY Avas 002)
87/82(?)(-)23-07 (ENKO Psce 003) — *CMI*: 82-••-23-07

91

91-91-•• [(MARO Avas 004) — *CMI*: 91-91
82-91-23 (MARO Avas 002)
91-91-•• [(MARO Avas 004) — *CMI*: 91-91

97

97 (ENKO Apes 002, 003) — *CMI*: 97, or 102
04-25/27-97 (ENKO Mins 003) — *CMI*: 04-27-97
41-41-97 (TIRY Abou 001)

98

33/46-98 (KLAV Avas 001) — *CMI*: 33-98
64-98 (ENKO Psce 005) — *CMI*: Unspecified

101

101 (KALO Avas 001)
61-101 (MAAP Avas 005)

102

102 (IDAL Avas 003)

104

23-104 (ENKO Mins 005)

Appendix C

CHRONOLOGY OF THE CYPRO-MINOAN INSCRIPTIONS

Inscription	***HoChyMin* (Vandenabeele)**	***CMI II* (Ferrara)**
##001. ENKO Atab 001	LC IB (1525-1425)	LC IB
##002. ENKO Abou 001	LC IIC? (1300-1230) ["LC IB"!]	LC IIC
##003. ENKO Abou 002	LC II (1250-1230)	LC IIC (end)
##004. ENKO Abou 003	LC II (1250-1230)	LC IIC
##005. ENKO Abou 004	LC II (1250-1230)	LC IIC (end)
##006. ENKO Abou 005	LC IIC (1300-1230)	LC IIC (late)
##007. ENKO Abou 006	LC IIC (1300-1230)	LC IIC (late)
##008. ENKO Abou 007	LC IIC (1250-1230)	LC IIC (late)
##009. ENKO Abou 008	LC IIIA (1220-1190)	LC IIIA-1
##010. ENKO Abou 009	LC IIIA (1220-1190)	LC IIIA-1
##011. ENKO Abou 010	LC IIIA (1220-1190)	LC IIIA
##012. ENKO Abou 011	LC IIIA (1220-1190)	LC IIIA
##013. ENKO Abou 012	LC IIIA (1220-1190)	LC IIIA
##014. ENKO Abou 013	LC IIIA (1220-1190)	LC IIIA
##015. ENKO Abou 014	LC IIIA (1220-1190)	LC IIIA
##016. ENKO Abou 015	LC IIIA (1220-1190)	LC IIIA
##017. ENKO Abou 015bis	LC IIIA (1220-1190)	LC IIIA
##018. ENKO Abou 016	LC IIIA (1220-1190)	LC IIIA
##019. ENKO Abou 016bis*	LC IIIA (1220-1190)	LC IIIA
##020. ENKO Abou 017	Might be late LC IIIB (1050?) ["C III C"]	LC IIIB (end)
##021. ENKO Abou 018	"hors context"	LBA (unspecified)

##022. ENKO Abou 019	"hors context"	LBA (unspecified)
##023. ENKO Abou 020	"hors context"	LC IIA-IIC
##024. ENKO Abou 021	"hors context"	LC IIA-IIC
##025. ENKO Abou 022	"hors context"	LBA (unspecified)
##026. ENKO Abou 023	"hors context"	LBA (unspecified)
##027. ENKO Abou 024	"hors context"	LBA (unspecified)
##028. ENKO Abou 025	"hors context"	LBA (unspecified)
##029. ENKO Abou 026	"hors context"	LBA (unspecified)
##030. ENKO Abou 027	"hors context"	LBA (unspecified)
##031. ENKO Abou 028	"hors context"	LBA (unspecified)
##032. ENKO Abou 029	"hors context"	LBA (unspecified)
##033. ENKO Abou 030	"hors context"	LBA (unspecified)
##034. ENKO Abou 031	"hors context"	LBA (unspecified)
##035. ENKO Abou 032	"hors context"	LBA (unspecified)
##036. ENKO Abou 033	"hors context"	LBA (unspecified)
##037. ENKO Abou 034	"hors context"	LBA (unspecified)
##038. ENKO Abou 035	"hors context"	LBA (unspecified)
##039. ENKO Abou 036	"hors context"	LBA (unspecified)
##040. ENKO Abou 037	"hors context"	LBA (unspecified)
##041. ENKO Abou 038	"hors context"	LBA (unspecified)
##042. ENKO Abou 039	"hors context"	LC IIIA-IIIB
##043. ENKO Abou 040	"hors context"	LC IIIA-IIIB
##044. ENKO Abou 041	"hors context"	LC IIIA-IIIB
##045. ENKO Abou 042	"hors context"	LC IIIA-IIIB
##046. ENKO Abou 043	"hors context"	LC IIIA-IIIB
##047. ENKO Abou 044	"hors context"	LC IIIA-IIIB

##048. ENKO Abou 045	"hors context"	LC IIIA-IIIB
##049. ENKO Abou 046	"hors context"	LC IIIA-IIIB
##050. ENKO Abou 047	"hors context"	LC IIIA-IIIB
##051. ENKO Abou 048	"hors context"	LC IIIA-IIIB
##052. ENKO Abou 049	"hors context"	LC IIIA-IIIB
##053. ENKO Abou 050	"hors context"	LC IIIA-IIIB
##054. ENKO Abou 051	"hors context"	LC IIIA-IIIB
##055. ENKO Abou 052	"hors context"	LC IIIA-IIIB
##056. ENKO Abou 053	"hors context"	LC IIIA-IIIB
##057. ENKO Abou 054	"hors context"	LBA (unspecified)
##058. ENKO Abou 055	"hors context"	LBA (unspecified)
##059. ENKO Abou 056	"hors context"	LBA (unspecified)
##060. ENKO Abou 057	"hors context"	LBA (unspecified)
##061. ENKO Abou 058	"hors context"	LBA (unspecified)
##062. ENKO Abou 059	"hors context"	LC IIIA-IIIB
##063. ENKO Abou 060	"hors context"	LC IIIA-IIIB
##064. ENKO Abou 061	"hors context"	LC IIIA-IIIB
##065. ENKO Abou 062	"hors context"	LC IIIA-IIIB
##066. ENKO Abou 063	"hors context"	LBA (unspecified)
##067. ENKO Abou 064	"hors context"	LBA (unspecified)
##068. ENKO Abou 065	"hors context"	LC IIIA-IIIB
##069. ENKO Abou 066	LC III (1150-1050)	LC IIIA-IIIB
##070. ENKO Abou 067	"hors context"	LC II
##071. ENKO Abou 068	"hors context"	LBA (unspecified)
##072. ENKO Abou 069	"hors context"	LC IIIA-IIIB
##073. ENKO Abou 069ter*	LC III (1150-1050)	LBA (unspecified)

##074. ENKO Abou 070	Not given	LBA (unspecified)
##075. ENKO Abou 071	Not given	LBA (unspecified)
##076. ENKO Abou 072	Not given	LBA (unspecified)
##077. ENKO Abou 073	Not given	LBA (unspecified)
##078. ENKO Abou 074	Not given	LBA (unspecified)
##079. ENKO Abou 075	Not given	LBA (unspecified)
##080. ENKO Abou 076	Not given	LBA (unspecified)
##081. ENKO Abou 077	Not given	LBA (unspecified)
##082. ENKO Abou 078	Not given	LC IIIA-IIIB
##083. ENKO Abou 079	Not given	LC IIIA-IIIB
##084. ENKO Abou 080	Not given	LC IIIA-IIIB
##085. ENKO Abou 081	Not given	LC IIIA-IIIB
##086. ENKO Abou 082	Not given	LC IIIA-IIIB
##087. ENKO Abou 083	Not given	LBA (unspecified)
##088. HALA Abou 001	Not given	LBA (unspecified)
##089. HALA Abou 002	LC IIIA (1125-1190)	LC IIIA1
##090. KITI Abou 001	LC IIIA (1190-1125/1100)	LC IIIA
##091. KITI Abou 002	LC IIIA (1190-1125/1100) (?)	LC IIIA
##092. ATHI Adis 001	LC (1650-1050)	LBA (unspecified)
##093. ENKO Aost 001	LC IIIA (1225-1200)	LC IIC
##094. ENKO Aost 002	LC IIIC (1225-1050?) [CR C III]	LBA (unspecified)
##095. ENKO Apes 001	LC I A-B (1650-1475)	LC IA-IB
##096. ENKO Apla 001	LC IIIB (1190-1150)	LC IIIA-IIIB(?)
##097. ENKO Arou 001	1400-1300	LC IIA-IIB
##098. KALA Arou 001	LC IIC, ca. 1325-1225	LC IIC
##099. KALA Arou 002	LC IIC, ca. 1325-1226	LC IIC

##100. KALA Arou 003	LC IIC, ca. 1325-1227	LC IIC
##101. KALA Arou 004	LC IIC, ca. 1325-1228	LC IIC
##102. KALA Arou 005	LC IIC, ca. 1325-1229	LC IIC
##103. PSIL Asta 001	LC III (1225-1050 ?)	LC IIIA
##104. ALAS Avas 001	1300-1100	LBA (unspecified)
##105. ARPE Avas 001	LC II (1300-1200)	LC II
##106. ATHI Avas 001	LC II (1400-1200)	LBA (unspecified)
##107. ATHI Avas 002	LC II (1400-1200)	LC III
##108. ENKO Avas 001	LC (1650-1050)	LC II
##109. ENKO Avas 002	Perhaps 1200-1100	LBA (unspecified)
##110. ENKO Avas 003	LC IIIA (1230-1190)	LC IIIA-IIIB
##111. ENKO Avas 004	LC IIIB-IIIC (1190-1050)	LC IIIB
##112. ENKO Avas 005	LC (1650-1050)	LBA (unspecified)
##113. ENKO Avas 006	LC IIA-IIB (1400-1300)	LC IIA-IIB
##114. ENKO Avas 007	LC IIC (1300-1250)	LC IIB (early)
##115. ENKO Avas 008	LC IIC (1300-1230)	LC IIB
##116. ENKO Avas 009	LC IIIA (1190)	LC IIIA (destruction level)
##117. ENKO Avas 010	LC IIIA (1220-1210/1190)	LC IIIA (destruction level)
##118. ENKO Avas 011	LC IIIA (1190)	LC IIIA (destruction level)
##119. ENKO Avas 012	LC IIIA (1220/1210-1190)	LC IIIA
##120. ENKO Avas 013	LC IIIA (1190-1150)	LC IIIB (early)
##121. ENKO Avas 014	LC IIIC (1100)	LC IIIB (destruction level)
##122. HALA Avas 001	LC IIB-late LC IIC (1325-1225)	LC IIB-IIC
##123. IDAL Avas 001	LC IIIC (ca. 1000)	LC IIIC
##124. IDAL Avas 002	LC (1650-1050)	Cypriot Archaic II(?)
##125. KALA Avas 001	LC IIC (1325-1225)	LC IIC

##126. KALA Avas 002	LC II (1325-1225) (LC IIC ?)	LC IIC
##127. KATY Avas 001	LC IIB (1400-1325)	LC IIB
##128. KATY Avas 002	LC IIC-IIIA (1325-1190)	LC IIC-IIIA1
##129. KATY Avas 003	LC IIB (1400-1325)	LC IIB
##130. KITI Avas 001	LC IIIA (ca. 1190-1125/1100)	LC IIIA
##131. KITI Avas 002	late LC IIC (1250-1175)	LC IIC (end)
##132. KITI Avas 003	LC III (ca. 1225)	LC IIIA
##133. KITI Avas 004	LC III (ca. 1225)	LC IIIA
##134. KITI Avas 005	LC III (ca. 1225)	LC IIC (end)
##135. KITI Avas 006	LC IIIA (ca. 1190-1125/1100)	LC IIIA
##136. KITI Avas 007	LC IIIA (ca. 1190-1125/1100)	LC IIIA
##137. KITI Avas 008	LC IIIA (ca. 1190-1125/1100)	LC IIIA
##138. KITI Avas 009	LC IIIA (ca. 1190-1125/1100)	LC IIIA
##139. KITI Avas 010	LC IIIA (ca. 1190-1125/1100)	LC IIIA
##140. KITI Avas 011	LC IIIA (ca. 1190-1125/1100)	LC IIIA
##141. KITI Avas 012	LC IIIA (ca. 1190-1125/1100)	LC IIIA
##142. KITI Avas 013	LC IIC / LC IIIA (ca. 1190)	LC IIIB
##143. KITI Avas 014	LC IIIB (1125/1100-ca. 1050)	LC IIIB
##144. KITI Avas 015	sans datation / no date	LC IIIB
##145. KITI Avas 016	LC IIIA (ca. 1190-1125/1100)	LC IIIB
##146. KITI Avas 017	sans datation / no date	LC IIC
##147. KITI Avas 018	CG I (1050-ca.1000)	CG
##148. KITI Avas 019	LC IIIC (1050)	LC IIIC
##149. KOUR Avas 001	"Indatable"	LC IIIA
##150. KOUR Avas 002	"Indatable"	LC IIIA
##151. KOUR Avas 003	"Indatable"	LC IIIB

##152. KOUR Avas 004	"Indatable"	LC IIIA
##153. MAAP Avas 001	LC IIIA (1225-1190)	LC IIIA
##154. MAAP Avas 002	LC IIIA (ca. 1200-1150)	LC IIC-IIIA
##155. MAAP Avas 003	LC IIIA1 (1200-1150)	LC IIC-IIIA
##156. MAAP Avas 004	LC IIIA (1200-1150)	LC IIIA
##157. MARO Avas 001	LC IIC (1300-1200)	LC IIC
##158. MYRT Avas 001	LC II-IIIA (1210-1190) [LC IIC-IIIA?]	LC IIC-IIIA
##159. MYRT Avas 002	Late LC IIC-IIIA (1210-1190)	LC IIC-IIIA
##160. TOUM Avas 001	LC IIB (1400-1325)	LC IIB
##161. KITI Iins 001	"LC IIIA-IIIA" (1190-ca.1125/1100)	LC IIIA
##162. KITI Iins 002	"LC IIIA-IIIA" (1190-ca.1125/1100)	LC IIIA
##163. KITI Ipla 001	LC IIIA (ca. 1190-1125/1100)	LC IIIA
##164. ENKO Mbij 001	LC III (1225-1050)	LC III or CG
##165. KALA Mbij 001	LC IIA (1425-1375)	LC IIA2
##166. KALA Mbij 002	LC IIA (1425-1375)	LC IIA2
##167. KITI Mexv 001	LC IIC (1300-ca. 1190)	LC IIC
##168. ENKO Mins 001	LC IIC-late LC III (sic)	LC IIC-IIIA
##169. ENKO? Mins 002	LC III (1125-1050)	LC III
##170. PPAP Mins 001	CG I (1050-950)	CG II
##171. PPAP Mins 002	CG I (1050-950)	CG II
##172. PPAP Mins 003	CG I (1050-950)	CG II
##173. PYLA Mins 001	Not given	LC IIC
##174. ENKO Mlin 001	LC (1650-1050)	LBA (unspecified)
##175. ENKO Mlin 002	1200-1100	LC IIIA
##176. ENKO Mlin 003	1200-1100	LC IIIA
##177. PYLA Mlin 001	LC IIC (1325-1225)	LC IIC

##178. CYPR Mvas 001	Sans context précis	LC IIC-IIIA
##179. CYPR Mvas 002	LC III (ca. 1125-1050)	LC IIC-IIIA
##180. CYPR Mvas 003	t.a.q. LC III (1225-1050)	LC IIC-IIIA
##181. CYPR Mvas 004	t.a.q. LC III (1225-1050)	LC III
##182. ENKO Mvas 001	LC IIIA (1220-1190)	LC IIIA early
##183. ENKO Mvas 002	LC II-III (1230-1100)	LC III
##184. MYRT Mvas 001	late LC IIC-LC IIIA (1225-1190)	LC IIC-IIIA
##185. MYRT Mvas 002	late LC IIC-LC IIIA (1225-1190)	LC IIC-IIIA
##186. PPAP Mvas 001	maybe 1050-1000	LC IIC? CG?
##187. ENKO Pblo 001	LC (1650-1050)	LC IIIA
##188. KITI Pblo 001	LC (1650-1050)	LC III
##189. PPAP Pblo 001	maybe CG I (1050-950)	CG I
##190. PPAP Pblo 002	CG I-II (1050-900)	CG I-II
##191. KALA Ppla 001	LC IIC (1325-1225)	LC IIC
##192. KALA Ppla 002	LC IIC (1325-1225)	LC IIC
##193. CYPR? Psce 001	LC I-II (1600-1300)	LBA (unspecified)
##194. CYPR? Psce 002	*t. post quem* Old Babylonian [=ca. -1550]	LBA (unspecified)
##195. CYPR Psce 003	LC IIB (1400-1325)	LC IIB
##196. CYPR? Psce 004	LC IIB (1400-1325)	LC IIB
##197. CYPR? Psce 005	LC II (1325-1225) [LC IIC?]	LC IIB
##198. CYPR? Psce 006	LC IIB (1400-1350)	LC IIB-IIC
##199. ENKO Psce 001	LC II (1325-1190)	LC IIB-IIC
##200. ENKO? Psce 002	LC II-III (1250-1200)	LC IIC
##201. HALA Psce 001	LC II (1325-1190) [LC IIC ?]	LC IIA-IIC
##202. KOUR Psce 001	LC IIA (1400-1375)	LC IIB
##203. PARA Psce 001	LC IIC (1325-1225)	LC IIB

##204. PYLA Psce 001	LC II? (1325-1225) [LC IIC ?]	LC IIC
##205. SALA Psce 001	LC IIA-IIB (1415-1370)	LC IIC
##206. PPAP Vsce 001	LC III (1225-1050)	LC IIIA(?)
##207. ENKO Atab 002a	t.a.q. LC IIIB (1125-1100)	LC IIIB
##207. ENKO Atab 002b	t.a.q. LC IIIB (1125-1100)	LC IIIA-IIIB
##208. ENKO Atab 003	t.a.q. LC IIIA (1210-1200)	LC IIIA
##209. ENKO Atab 004	t.a.q. LC IIIA (1210-1200)	LC IIIA-IIIB
##210. RASH Aéti 001	LC IIIA (1225-1190)	LC IIC-IIIA
##211. RASH Aéti 002	LC IIIA (1225-1190)	LC IIC
##212. RASH Atab 001	LC IIC (1325-1225)	LC IIC
##213. RASH Atab 002	LC IIC (1325-1225)	LC IIC-IIIA
##214. RASH Atab 003	LC IIC (1325-1225)	LC IIC-IIIA
##215. RASH Atab 004	LC IIC (1325-1225)	LC IIC-IIIA
##216. RASH Mvas 001	LC (1650-1050)	LC IIC-IIIA
##217. SYRI Psce 001	LC (1650-1050)	LBA (unspecified)
ADD##218. PARA Psce 002	Not in *HoChyMin*	LC IIB(?)
ADD##219. APLI Psce 001*	Not in *HoChyMin*	LC IIC
ADD##220. CYPR Psce 007	Not in *HoChyMin*	LC IIIB
ADD##221. DHEN Avas 001	Not in *HoChyMin*	LC I- II
ADD##222. ENKO Apes 002*	Not in *HoChyMin*	LC IIIA
ADD##223. ENKO Apes 003*	Not in *HoChyMin*	LC IIIA (late)
ADD##224. ENKO Pblo 002	Not in *HoChyMin*	LBA (unspecified)
ADD##225. ENKO Psce 003	Not in *HoChyMin*	LC IA
ADD##226. ENKO Psce 004	Not in *HoChyMin*	Unspecified
ADD##227. ENKO Psce 005	Not in *HoChyMin*	LC IIIB
ADD##228. ENKO Mins 003*	Not in *HoChyMin*	LC III

ADD##229. ENKO Mins 004	Not in *HoChyMin*	LC III
ADD##230. ENKO Mins 005	Not in *HoChyMin*	LC III
ADD##231. KLAV Avas 001	Not in *HoChyMin*	LC IA1 or LC IIC1-IIIA
ADD##232. IDAL Psce 001*	Not in *HoChyMin*	LC IIIC
ADD##233. IDAL Avas 003	Not in *HoChyMin*	LC III
ADD##234. IDAL Pfus 001	Not in *HoChyMin*	LC III
ADD##235. KALO Avas 001	Not in *HoChyMin*	LC I-II(?)
ADD##236. KITI Avas 020	Not in *HoChyMin*	LC IIIA
ADD##237. KITI Avas 021	Not in *HoChyMin*	LC IIC
ADD##238. MAAP Avas 005	Not in *HoChyMin*	LC IIC-IIIA
ADD##239. MARO Avas 002	Not in *HoChyMin*	LC IIC
ADD##240. MARO Avas 003	Not in *HoChyMin*	LC IIC
ADD##241. MARO Avas 004	Not in *HoChyMin*	LC IIC
ADD##242. SANI Avas 001	Not in *HoChyMin*	LBA (unspecified)
ADD##243. RASH Avas 001	Not in *HoChyMin*	LBA (unspecified)

Inscription	Chronology	Source
ADD##244. TIRY Abou 001	LC IIIC Developed	Vetters (2011)
ADD##245. TIRY Avas 001	—	—
ADD##246. TIRY Avas 002	Early LH IIIB Final	B. Davis *et al.* (2014)
ADD##247. ENKO Abou 084	1200-1100	É. Masson (1978)
ADD##248. KOUR Avas 005	LC IIC-IIIA	Daniel (1941)
ADD##249. KOUR Avas 006	Unreported	—
ADD##250. KOUR Avas 007	LC II	Benson and Masson (1960)
ADD##251. RASH Avas 002	Unreported	—
ADD##252. CYPR? Psce 008	Unknown	—
ADD##253. PPAP Psce 001	In a CG I (secondary) context	V. Karageorghis (1983a)

Appendix D

CYPRO-MINOAN SIGN VALUES FROM COMPARATIVE ANALYSES IN THE BIBLIOGRAPHY (1953-2013)

Table D 1: Hypothetical sound values assigned to CM signs in previous scholarship (I).

	Sittig (1956: 41)	É. Masson (1973, 1974)	Saporetti (1976: fig. 41)	Faucounau (1977, 1980)	Nahm (1981, 1984)	Duhoux (2009b; 2013)	Olivier (2013)	Facchetti *et al.* (2013)	Steele (2013)
01	-	-	*we*	*we*	*we*	*we*[??]	*we*	*we*	-
02	-	*p/bu*	-	-	*ne*	-	-	*ne*	-
04	*d/t/tha*	*da*	*t/da*	*d/ta*	*ta*	*t/da*[?]	*d/ta*	*ta*	D*a*
05	*l/ro*	-	*lo*	*lo*	*lo*	*l/ro*[?]	*r/lo*	*lo*	*l/ro*[?]
06	*b/p/pha*	*p/ba*	*pa*	*p/b/wa*	*pa*	*pa*[?]	*pa*	*pa*	P*a*
07	-	-	*te*	*d/te*	*te*[?]	-	-	-	-
08	*na*	*ta*	*na*	*na*	*na*	*to*[?]	*na*	*na*	*na*
09	*so*	*li(e)*	*li*	*li*	*li*	-	-	*li*	-
10	*si (tsi)*	-	-	*so*	-	-	-	-	-
11	-	-	-	*p/b/we*	*pe*	*pe*[??]	-	*pe*	-
12	-	-	*po*	*p/b/w/βo*	*po*	*u*[??]	*u*	-	-
13/78	-	-	-	*d/to*	*to*	*to*[?]	*to**	*to*	13 D*o*

Table D 2: Hypothetical sound values assigned to CM signs in previous scholarship (II).

	Sittig (1956: 41)	É. Masson (1973, 1974)	Saporetti (1976)	Faucounau (1977, 1980)	Nahm (1981, 1984)	Duhoux (2009b)	Olivier (2013)	Facchetti *et al.* (2013)	Steele (2013)
17	*no*	-	*u*	*βe*	*no*	-	-	*no*	-
19/79	-	-	-	19 *u* 79 *./ho*	*u*	-	-	19 *u* 79 *o*	-
21/15	*g/k/kho*	-	*ko*	*k/g/ḫo*	*ko*	-	-	*ko*	-
23	*b/p/phi*	*ṭ*V, *ti(e)*	*mo*[?], *ti*[?]	*d/ti*	*ti*	*ti*[?]	*ti*	*ti*	*ti*
24	-	-	-	CM2 *lu*, CM1 *le*	*le*	*le*[??]	-	-	-
25	*g/k/kha*	*ḫ/ġa*	*ka*	*k/g/ḫa*	*ka*	-	-	*ka*	-
26	-	-	-	*k/ḫu*	-	-	-	-	-
27	*b/p/pho*	*s*V	*si*[?], *zo*[?]	*š/si*	*si*	-	-	*si*	-
28	*d/t/thi*	*nu*	*ni*	*nu*, *za*	*ru*	-	-	-	-
29	-	-	*to*	*./hu*	*wo*?	-	-	-	-
30	*o*	-	-	*k/g/ḫu*	*tu*	-	-	-	-
33	*lei/rei*, va_2	-	*re*	*re*	*re*	*re*[??]	-	*re*	-
34/56	-	-	56 *ke*	56 *ne*	56 *ne*	-	-	-	-
35	*g/k/khe*	*la*	*no*	*wi*	*me*	*ne*[??]	-	-	-
36	-	-	-	*ye*	-	-	-	-	-
37	*io*	-	-	*p/bu*	*te*	-	-	-	-

Table D 3: Hypothetical sound values assigned to CM signs in previous scholarship (III).

	Sittig (1956: 41)	É. Masson (1973, 1974)	Saporetti (1976)	Faucounau (1977, 1980)	Nahm (1981, 1984)	Duhoux (2009b)	Olivier (2013)	Facchetti *et al.* (2013)	Steele (2013)
38	*o*	*u*	*a*$_2$	*e*	*e*	-	-	*e*	-
39/49	*si*$_2$	-	49 *pi*	39 *mu*, 49 *p/bi*	-	-	-	49 *pi*	-
40	-	*y*V	-		*ye*, *yi*	-	-	-	-
41	-	*k*/*q*(*u*$^?$)	*pu*	41=*ni*, *zu*; 94=*no*	*tu*	-	-	-	-
44	-	-	*se*	*se*, *š*/*se*	*se*	*se*$^?$	*se*	*se*	*se*
46/47	*me*$^?$	-	*pu*	*d*/*tu*	*su*	-	-	46 *su*	-
50/51	-	*p/bi(e)*	51 *sa*	*p/b/wi*, 51 *βa*	*pi*	-	-	50 *jo*	-
52	-	-	*ma*	*ma*	-	-	-	-	-
53/54/55	-	*ša*	*w*V	53 *ma*, 54 *ni*	53/55 *ma* 54 *mu*	-	-	55 *ma*	-
59	*i*$^{??}$	-	-	*zu*	*zo*	-	-	-	-
60	-	-	*mi*	*βi*	*so*	-	-	-	-
61/63	*d/t/the*	-	*te*	*βu*	*pu*	-	-	-	-
62	-	-	*ku* / *ko*$_2$	*d*/*t*/*te*	*ma*$^?$	-	-	-	-
64	-	-	-		*o*	*o*$^{??}$	-	-	-
65/67/99/100	65 *li*/*ri*	100 *ni(e)*	100 *ki*	65/100 *nu*	99/100 *ni* 65 *te*	-	-	-	-
68	-	-	*nu*	*su*	*nu*	-	-	*nu*	-

Table D 4: Hypothetical sound values assigned to CM signs in previous scholarship (IV).

	Sittig (1956: 41)	É. Masson (1973, 1974)	Saporetti (1976)	Faucounau (1977, 1980)	Nahm (1981, 1984)	Duhoux (2009b)	Olivier (2013)	Facchetti *et al.* (2013)	Steele (2013)
69/71/72	-	71 = *ḏ*V, *ṯi(e)*	-	72 *ya*, 69b *mo*	*ya*	-	-	69 *ja*	-
70	-	*mi(e)*	*ki*	*k*/*g*/*ḫi*	*ki*	-	*ki*	*ki*	-
72*b*	-	-	*ja*	*ya*	-	-	-	-	-
73	-	-	-	-	*mo*	-	-	-	-
74	*ie*	*m*V		*mu*	-	-	-	-	-
75	*ia*	*r*V	*ra*	CM1/2 *ri*, CM3 *ra*	*ra*	-	-	*ra*	-
76	*ma*$^{?}$	-	*le*	*le*	-	-	-	*le*	-
80	-	-	*ne*	*is*(!)	*jo*$^{?}$	-	-	-	-
81	-	-	-	*as*(!)	*o*$^{?}$	-	-	-	-
82	*vo*	*ḫ*/*ġi(e)*, *ḫu*	*sa*	*š*/*sa*	*sa*	-	*sa*	*sa*	-
86	-	-	-	-	-	-	-	-	-
87	*la*/*ra*	*tu*	*la*	*la*	*la*	-	*ra*/*la*	*la*	-
88/89/90	-	-		88/89 *zi*, *90 zo*	89/90 *mi*	-	-	-	-
91	-	-	*mi*	-	*mi*	-	-	*mi*	-
92	-	-		*zi*, *pza*	*ju*$^{?}$	-	-	-	-
95	*va* (*ma*$_2^{?}$)	*š*V	*wa*	*wa*	*wa*	-	-	*wa*	-

Table D 5: Hypothetical sound values assigned to CM signs in previous scholarship (V).

	Sittig (1956: 41)	É. Masson (1973, 1974)	Saporetti (1976)	Faucounau (1977, 1980)	Nahm (1981, 1984)	Duhoux (2009b)	Olivier (2013)	Facchetti *et al.* (2013)	Steele (2013)
96/85/114	*la*$_2$/*ra*$_2$	*ru*$^?$	*ru*	*ru*	*ri*	-	-	-	-
97	*mo*	-	*ro*	*ro*	*ro*	-	-	*ro*	-
98	-	-	-	*wo*	-	-	-	-	-
102 /101	*a*	*a*	*a*$_2$	*(h)a*	*a*	*a*$^?$	*a*	*a*	*a*
103	-	-	-	*ni*	-	-	-	-	-
104	*e*	*i (e)*	*i*	*i*	*i*	-	-	*i*	*i*
105	-	-	*ri*	*k/g/ḫu*	-	-	-	-	-
107/108	*eu*$^{??}$	-	*ma*$^?$, *o*$^?$	*k/g/ḫe, (h)a*	*ke, za*(?)	-	-	-	-
109	-	-	-	-	-	-	-	-	-
110	*ai*	-	*e*	*k/ḫe, za*	*ku*	-	-	*ke*	-
112	-	-	-	-	-	-	-	-	-

Appendix E

INDEX OF INTERPRETED SEQUENCES

04 → *ta*ʔ

04-08-100 → ***ta***ʔ***-na***ʔ***-ni***ʔ (RASH Atab 004.A.10). MPN, gen.: /Danāni/ (Cf. Ugarit *dnn* and *da-na-nu*). Already Nahm (1981: 61).

04-71-100 → ***ta***ʔ***-ja***ʔ***-ni***ʔ (RASH Atab 004.A.05). MPN, gen.: /Tajāni/ (Cf. Nuzi *Tayanu*). Already Nahm (1981: 60).

15/21 → *ko*ʔ

21-82-75-51 → ***ko***ʔ***-sa***ʔ***-ra-pi***ʔ (RASH Atab 004.B.13). West-Semitic MPN, gen.: /Kōθarʾabī/ (Ugarit *Ku-šar-a-bi*; cf. separately the elements *kṯr-* and *-ab* in alphabetical transmission). Already Saporetti (1976: 102): *Ko-sa-ra-bi*.

19/79 → *u*

19-91-73-23 → ***u-mi***ʔ***-mo***ʔ***-ti*** (RASH Atab 004.B.14). West-Semitic MPN, gen.: /ʾUmmimōti/ (Ugarit *ummt*). Already Nahm (1981: 61).

15/21 → *ko*ʔ

25-51-09 → ***ka***ʔ***-pi***ʔ***-li*** (RASH Atab 004.A.08). Akkadian MPN, gen.: /Karbili/? (Emar *Karbili*; cf. also Ugarit *krb* = Emar *Karbu*).

37b/41 → *zi*ʔ

37b-04-100 → ***zi***ʔ***-ta***ʔ***-ni***ʔ (RASH Atab 004.A.09). Anatolian MPN, gen.: /ʦidanni/ (Ugarit *śdn* at Ugarit; cf. also El-Amarna *Zi-ta-na*, Hattusa: *Zi-da-a-an-ni* and Emar *Zi-da-an-na*).

37b-71-100-40 → ***zi***ʔ***-ja***ʔ***-ni***ʔ***-ji***ʔ (RASH Atab 004.A.09). Toponymic adj. gen.: /ʦijanniji/ ‘from Siyannu’ (Ugaritic *syny*; cf. $^{\text{URU}}$*sí-ia*(*-an*)*-ni*/*na*$^{(\text{ki})}$ ‘Siyannu’).

38 → *e*[?]

38-01-04-82-09 → ***e***[?]***-we₂***[??]***-ta***[?]***-sa***[?]***-li*** (RASH Atab 004.B.16). Hurrian(?) MPN gen.: /Evritazal/(?) (Cf. Ugarit *iwrtḏl* and EN-*ta-šal* / EN-*ta-ša-lu*). Mistake for ****e**[?]*-we*$_2$[??]*-ri-ta*[?]*-sa*[?]*-li*? First proposed by Nahm (1981): *e-we-ta-ša-li*.

38-35-100 → ***e***[?]***-wi₂***[??]***-ni***[?] (RASH Atab 004.A.07). Hurrian(?) MPN gen.: /Even(n)i/? (cf. Mari *Ewen*(*n*)*i*, spelled *e*-PI-*ni* and *e*-PI-*en-ni*, and Alalaḫ *Ewen*).

50/51 → *pi*[?]

51-28 → ***pi***[?]***-lu***[?] (RASH Atab 004. A.01, 05-08, 10, 11; B.14, 15, 18). Construct sg.: /binu/ 'son' (Ugaritic *bn*). É. Masson (1973; 1974): *bi-nu*.

51-28 | 55-70 → ***pi***[?]***-lu***[?] **|** ***ma***[?]***-ki***[?] (RASH Atab 004.B.15, 18): /binu malki/ 'son of (the) king'(?) (Ugaritic *bn mlk*; cf. also *ma-al-ku*). See 55-70.

53/54/51 → *ma*[?]

53-09-70-12-23 → ***ma***[?]***-li-ki***[?]***-po***[?]***-ti*** (ENKO Arou 001.03). West-Semitic MPN, gen.(?): Cf. West-Semitic PNs whose first element is *mlk-*.

55-25-51-40 → ***ma***[??]***-ka***[??]***-pi***[??]***-ji***[??] (RASH Atab 004.A.04). Toponymic adj. gen.: /Maʿqabīji/ 'from Maʿqabu' (Ugaritic *mʕqby*; cf. *mʕqb* = ^{URU}*ma-*(*ʾa-*)*qa*/*qá-* 'Maʿqabu'). Already Nahm (1981: 60): *ma-ka-pi-yi*.

55-70 → ***ma***[??]***-ki***[??] (RASH Atab 004.B.15, 18). Gen. sg. masc.: /malki/ 'king'? (Ugaritic *mlk* = *ma-al-ku*); or MPN, gen.? (Cf. Emar *Makki*). See 51-28.

69/71/72 → *ja*[?]

71-50-05-<u>23</u> → ***ja***[?]***-pi***[?]***-lo***[?]***-<u>ti</u>*** (SYRI Psce 001). MPN, gen.(?). *Yabbi-ʾIlu*? (Cf. Ur III Amorite *ia-an-bi-i-lum* =*Yanbi-ʾIlum*).

101/102 → *a*

102-02-100 → ***a-ne***[?]***-ni***[?] (RASH Atab 004.B.16). MPN, gen.(?): /Aneni/? (Cf. Ugarit *ann* and Alalaḫ/Emar *A-na-ni*, or Emar *a-ni-ni*). Already Nahm (1981: 60), who compares only *ann* and *Anani*.

102-25-87-51 → ***a-ka$^{?}$-la$^{?}$-pi$^{?}$*** (RASH Atab 004.B.15). Hurro-Semitic MPN, gen.(?): /Aɣalʾabī/ ‘(An) emancipated (man) is my father’? (unattested, but cf. the reverse name *abġl* = *a-bi-ḫe/ḫé-li* /ʾAbī-ɣeli/ and *abršp* vs. *ršpab*).

102-73-04-97 → ***a-mo$^{?}$-ta$^{?}$-ro*** (ENKO Abou 015, 021 and 045; ENKO Avas 002). MPN, nom.$^{(?)}$: = *Amutaru* (Ugarit, etymology uncertain). Already Nahm (1981: 62).

102-73-04-97-23 → ***a-mo$^{?}$-ta$^{?}$-ro-ti*** (KITI Ipla 001.*v*). Gen. of preceding?

102-74-82-51 → ***a-wi$^{?}$-sa$^{?}$-pi$^{?}$*** (RASH Atab 004.A.02). West-Semitic MPN, gen.: /ʾAbīršap/ (Ugarit *abršp*, Emar *A-bi-ir-ša$_{10}$-ap-*; cf. also Ugarit *ʕbdršp* = ÌR-*ir-šap*). Nahm (1981: 60): “könnte mit dem Gottesnamen *Iršap* gebildet sein, vgl. etwa *Abdi-iršap*”.

102-74-75-51 → ***a-wi$^{?}$-ra-pi$^{?}$*** (RASH Atab 004.B.17). West-Semitic MPN, gen.: /ʾAbīraš̌p/ (Ugarit *abršp*, Emar *A-bi-ra-šap*) or /ʾAbīrapʔi/ (Hazor Amorite *A-bi-ra-pí*, Alalaḫ *A-bi-ra-a-bi*).

104 → *i*

104-09-04-55-96 → ***i-li-ta$^{?}$-ma$^{?}$-ri*** (RASH Atab 004.A.10). West-Semitic MPN, gen.: /ʾIlītθtamar/ (Ugaritic *il̲tmr*, Amorite *Ì-lí-iš-ta-mar*). Already Nahm (1981: 61).

104-09-06-09 → ***i-li-pa$^{?}$-li*** (ENKO Abou 080). West-Semitic MPN, nom.$^{(?)}$: /ʾIlībaʿl/ (Ugarit *ilbʕl*). Already É. Masson (1973: 43; 1974: 41).

104-09-55-09-70 → ***i-li-ma$^{?}$-li-ki$^{?}$*** (RASH Atab 004.B.14). West-Semitic MPN, gen.: /ʾIlīmalik/ (Ugarit *ilmlk*; cf. also Alalaḫ DINGIR-*ma-lik*). Saporetti (1976): *i-li-mi-li-ki*; Nahm (1981: 61): *i-li-ma-li-ki*.

104-09-71-100 → ***i-li-ja$^{?}$-ni$^{?}$*** (RASH Atab 004.A.09). West-Semitic MPN, gen.: /ʾIlījāni/ (Ugarit *ilyn* ~ DINGIR-*ia-nu*). Already Nahm (1981: 61): *i-li-ya-ni*.

104-<u>25/102</u>-06-09 → ***i-<u>(k)a</u>$^{?}$-pa$^{?}$-li*** (RASH Atab 004.A.03). West-Semitic MPN, nom.(?): Theophoric with Baʿl(u)?. Cf. É. Masson (1974: 41): *I-ya-ba-li*.

Appendix F

THE INTERNATIONAL PHONETIC ALPHABET[1251]

CONSONANTS (PULMONIC) © 2005 IPA

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap		ⱱ		ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

CONSONANTS (NON-PULMONIC)

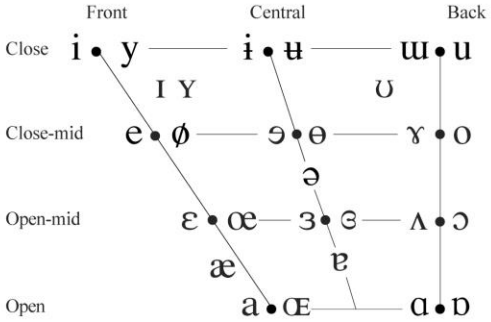
Clicks		Voiced implosives		Ejectives	
ʘ	Bilabial	ɓ	Bilabial	’	Examples:
|	Dental	ɗ	Dental/alveolar	pʼ	Bilabial
!	(Post)alveolar	ʄ	Palatal	tʼ	Dental/alveolar
ǂ	Palatoalveolar	ɠ	Velar	kʼ	Velar
‖	Alveolar lateral	ʛ	Uvular	sʼ	Alveolar fricative

OTHER SYMBOLS

ʍ	Voiceless labial-velar fricative	ɕ ʑ	Alveolo-palatal fricatives
w	Voiced labial-velar approximant	ɺ	Voiced alveolar lateral flap
ɥ	Voiced labial-palatal approximant	ʢ	Simultaneous ʃ and x
ʜ	Voiceless epiglottal fricative		
ʡ	Voiced epiglottal fricative		
ʡ	Epiglottal plosive		

Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary. k͡p t͡s

VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

DIACRITICS Diacritics may be placed above a symbol with a descender, e.g. n̥

◌̥	Voiceless	n̥ d̥	◌̤	Breathy voiced	b̤ a̤	◌̪	Dental	t̪ d̪
◌̬	Voiced	s̬ t̬	◌̰	Creaky voiced	b̰ a̰	◌̺	Apical	t̺ d̺
◌ʰ	Aspirated	tʰ dʰ	◌̼	Linguolabial	t̼ d̼	◌̻	Laminal	t̻ d̻
◌̹	More rounded	ɔ̹	◌ʷ	Labialized	tʷ dʷ	◌̃	Nasalized	ẽ
◌̜	Less rounded	ɔ̜	◌ʲ	Palatalized	tʲ dʲ	◌ⁿ	Nasal release	dⁿ
◌̟	Advanced	u̟	◌ˠ	Velarized	tˠ dˠ	◌ˡ	Lateral release	dˡ
◌̠	Retracted	e̠	◌ˤ	Pharyngealized	tˤ dˤ	◌̚	No audible release	d̚
◌̈	Centralized	ë	◌̴	Velarized or pharyngealized	ɫ			
◌̽	Mid-centralized	e̽	◌̝	Raised	e̝	(ɹ̝ = voiced alveolar fricative)		
◌̩	Syllabic	n̩	◌̞	Lowered	e̞	(β̞ = voiced bilabial approximant)		
◌̯	Non-syllabic	e̯	◌̘	Advanced Tongue Root	e̘			
◌˞	Rhoticity	ɚ a˞	◌̙	Retracted Tongue Root	e̙			

SUPRASEGMENTALS

ˈ	Primary stress	ˌfoʊnəˈtɪʃən
ˌ	Secondary stress	
ː	Long	eː
ˑ	Half-long	eˑ
˘	Extra-short	ĕ
|	Minor (foot) group	
‖	Major (intonation) group	
.	Syllable break	ɹi.ækt
‿	Linking (absence of a break)	

TONES AND WORD ACCENTS

LEVEL			CONTOUR	
e̋ or	˥	Extra high	ě or	˩˥ Rising
é	˦	High	ê	˥˩ Falling
ē	˧	Mid	ě	˨˦ High rising
è	˨	Low	ě	˩˨ Low rising
ȅ	˩	Extra low	ě	˥˩˦ Rising-falling
↓		Downstep	↗	Global rise
↑		Upstep	↘	Global fall

[1251] http://www.internationalphoneticassociation.org/content/ipa-chart, available under a Creative Commons Attribution-Sharealike 3.0 Unported License. ©2005 IPA.

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